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OF

MEDICAL SCIENCE.

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CONTENTS.

THIRD SERIES, No. CLXIII.—JULY 1, 1885.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. I.—Four Cases of Acute Pneumonia occurring in One Family at the same time. By WALTER G. SMITH, M.D.; Physician to Sir Patrick Dun's Hospital; King's Professor of Materia Medica, School of Physic, Trinity College, Dublin, - - - - 1

ART. II.—The House Accommodation of the Artisan and Labouring Classes in Ireland, with Special Reference to Dublin and other Large Towns. By THOMAS WRIGLEY GRIMSHAW, M.A., M.D.; Diplomate in State Medicine, Trinity College, Dublin; Registrar-General for Ireland; Vice-President of the Statistical and Social Inquiry Society of Ireland; Vice-President of the Dublin Sanitary Association; Consulting Physician to Steevens', Cork-street Fever, and the Dublin Orthopædic, Hospitals, - - - - - 7

ART. III.—Basic Aural Dyscrasia; being an Inquiry into a Condition of System disposing to Aural Disease, now for the first time described as the Basic Aural Dyscrasia, involving an Explanation of the Mode of Causation of Tinnitus Aurium, and a Description of a hitherto unnoticed Form of Deafness—Vascular Deafness. By ROBERT T. COOPER, M.A., M.D., Univ. Dubl., London—*(continued)*, 25

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. A Text-book of Pharmacology, Therapeutics, and Materia Medica. By T. LAUDER BRUNTON, M.D., F.R.S., F.R.C.P.; Assistant Physician and Lecturer on Materia Medica at St. Bartholomew's Hospital, London; Examiner in Materia Medica in the University of London, in the Victoria University, and in the Royal College of Physicians. Adapted to the United States Pharmacopœia by F. WILLIAMS, M.D., Boston, U.S.A., - - - - - 37

2. An Address on "Cholera Inquiry." By the HON. SURGEON-GENERAL CORNISH, F.R.C.S., C.I.E.; President, South India Branch, British Medical Association, - - - - - - - 40

PAGE

3. The Science and Art of Surgery. By JOHN ERIC ERICHSEN, F.R.S.; Surgeon Extraordinary to Her Majesty the Queen. Eighth Edition. Revised and Edited by MARCUS BECK, F.R.C.S., - - 41
4. Why not Eat Insects? By VINCENT M. HOLT, - - - 43
5. One Hundred Years of Publishing, 1785–1885, - - - 44
6. Transactions of the College of Physicians of Philadelphia. Third Series. Vol. VII., - - - - - - 45
7. The International Encyclopædia of Surgery. Edited by JOHN ASHHURST, Jun., M.D.; Professor of Clinical Surgery in the University of Pennsylvania. In Six Volumes. Vol. V., - - 48
8. Man: Whence and Whither? A Lecture delivered at Sheffield. By H. J. HARDWICKE, M.D., - - - - - - 50
9. Royal University of Ireland. The Calendar for the Year 1885, - 50
10. The Microtomist's Vade-mecum: a Handbook of the Methods of Microscopic Anatomy. By ARTHUR BOLLES LEE, - - 51
11. Surgical Handicraft: a Manual of Surgical Manipulations, Minor Surgery, &c. By WALTER PYE, F.R.C.S.; Surgeon to St. Mary's Hospital, - - - - - - - - - 52

PART III.—HALF-YEARLY REPORTS.

REPORT ON DISEASES OF WOMEN. By WILLIAM J. SMYLY, M.D., Univ. Dubl.; F.K.Q.C.P.I.; Gynæcologist to the City of Dublin Hospital; Examiner in Midwifery, King and Queen's College of Physicians:—

Kraurosis Vulvæ, - - - - - - - - 53
Menstruation, - - - - - - - - 54
Oophorectomy, - - - - - - - - 55
The Sources of Failure, - - - - - - 62
A New Operation for the Cure of Pyosalpynx, - - - 64

PART IV.—MEDICAL MISCELLANY.

SUB-SECTION OF ANATOMY AND PHYSIOLOGY.

Introductory Remarks. By D. J. CUNNINGHAM, M.D., Chairman, 67
Patent Foramen Ovale. By MR. BROOMFIELD, - - - 67
Method of Exhibiting the Alternation of the Sectors of the Crystalline Lens. By PROFESSOR BENNETT, - - - - 67
Anomaly of Arch of Aorta. By MR. M'ARDLE, - - - 68
Anomalous Coronary Branch arising from Pulmonary Artery. By DR. BROOKS, - - - - - - - - 69
Musculus Sternalis in Anencephalous Fœtus. By DR. CUNNINGHAM, 69
Vena Azygos Major ascending on the Left Side, and the Bearing of this Anomaly on the Development of the Azygos Blood-vessels. By DR. BROOKS, - - - - - - 70
Description of Andaman Skeleton compared with those of other Races. By DR. CUNNINGHAM, - - - - - - 71

PAGE

MEDICAL SECTION.

Hyperpyrexia in Rheumatic Fever. By Dr. Finny, - - 72
Senile Dementia. By Dr. Henry Kennedy, - - - 73
The Form of Pneumonia now Prevalent in Dublin. By Dr. James Little, - - - - - - - - - 74

SURGICAL SECTION.

Excision of the Clavicle. By Mr. Wheeler, - - - 79
Excision of the Shoulder. By Mr. Wheeler, - - - 79
Condylotomy with the Osteotome for Genu Valgum. By Mr. Swan, - - - - - - - - 80

PATHOLOGICAL SECTION.

Multiple Exostoses. By Professor Thornley Stoker, - - 83
Oil Wart. By Mr. Story, - - - - - 85
Tar Cancer. By Dr. Ball, - - - - - 85

Sanitary and Meteorological Notes. Compiled by J. W. Moore, M.D., F.K.Q.C.P., F. R. Met. Soc.:—
Vital Statistics of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, May 23, 1885, - - - 88
Meteorology—Abstract of Observations made at Dublin for Month of May, 1885, - - - - - - - 90

Periscope:—
Biliary Calculi, - - - - - - - 36
The Abortive Treatment of Typhoid Fever by Mercurial Inunction, 6
Antipyrin, - - - - - - - 6
Alcoholic Paralysis, - - - - - - 94
Treatment of Intestinal Obstruction, - - - - 95

NOTICES TO CORRESPONDENTS.

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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

JULY 1, 1885.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Four Cases of Acute Pneumonia occurring in one Family at the same time.*[a] By WALTER G. SMITH, M.D.; Physician to Sir Patrick Dun's Hospital; King's Professor of Materia Medica, School of Physic, Trinity College, Dublin.

FOR some time past pneumonia has been very prevalent in Dublin, and a considerable number of deaths have been occasioned by it, the mortality having been exceptionally high.

From returns kindly furnished by the Registrar-General, I find that the mortality from pneumonia for the first seven weeks of 1885 represents an average of 8·1 deaths per week, against an average of 5·7 per week for the corresponding period in 1884.

In Sir Patrick Dun's Hospital, during the four months November, 1884, to February, 1885, inclusive, my colleague, Dr. Finny, and I met with an unusually large proportion of cases of acute lobar pneumonia, several of which were of a severe type, and the mortality was extremely high.

In this communication I propose to bring forward a group of four cases of acute pneumonia occurring in members of the same family at or about the same time, and in a way which seemed to offer some analogy to the spread of an infective disease:—

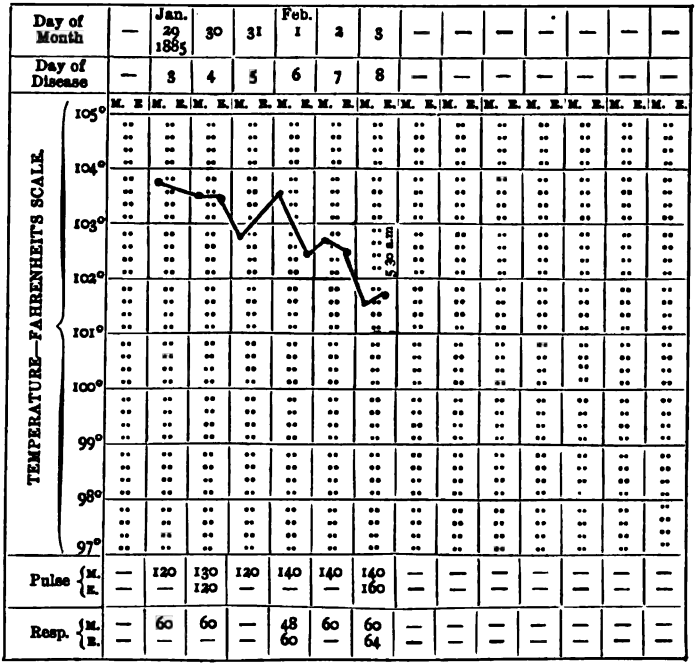
CASE I.—On the 29th January, 1885, I was asked to see a young gentleman, aged sixteen. I found him sitting in an arm-chair, breathing rapidly and with distress, with a frequent teasing cough, and the aspect

[a] Read before the Medical Section of the Academy of Medicine on Friday, Feb. 27, 1885.

of being seriously ill. His mother informed me that he had been complaining for two days previously of cough and loss of appetite, and had not slept well, but nothing was thought of beyond a common cold. Early in the morning of the day I first saw him he did not seem worse, but about 11 a.m. he was suddenly struck with a most severe pain in the right side of the chest, which increased in intensity, urging him to bend forwards, and rendering it impossible for him to lie down. At 1 p.m. T. 103·8°, P. 120, R. 60. He was got to bed, and, upon examination, the lower lobe of the right lung was found to be in a state of hepatisation.

CHART OF TEMPERATURE, &c. (Case I.)

Name, E. B.; *Age*, 16; *Disease*, Pneumonia; *Result*, Death.



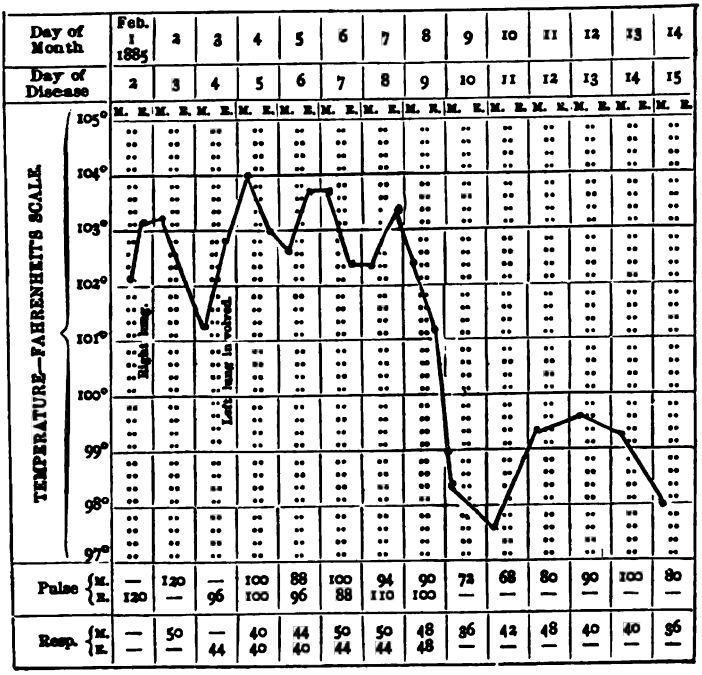
During the next two days there was no abatement of the symptoms, the respirations were unchanged, and a fair amount of viscid rusty sputum was expectorated. On the succeeding day, *i.e.*, the sixth day of his illness, it was discovered that the base of the left lung was involved. The urine was albuminous, and he rambled constantly. From that time the pulse never fell below 140, and the respirations seldom, if at all, below 60. He was a lad of powerful build, fond of bicycle exercise, and had been in vigorous health previously. Abundance of nourishment was taken,

with a due amount of stimulants, and he made a brave fight for life; but on the night of the eighth day of the illness his strength began to ebb, the dyspnœa intensified, and, after a scene of noisy delirium and of violent struggles, painful to witness, the end came.

Case II.—On the sixth day of this lad's illness, *i.e.*, February 1st, I was requested to see his brother, aged thirteen years, who was complaining of a pain in the right side of his chest from the day previous (January 31st). When examined, it was found that he had acute pneumonia of lower lobe of right lung. T. 102·2°–103·2°, P. 120, R. 50. In the course of the next afternoon and succeeding morning his temperature fell to nearly 101°, but a rise set in during the afternoon of the fourth day, coincident with implication of the lower lobe of left lung. The T. rose to 104°, and he looked more seriously ill; yet, singularly enough, the pulse did not exceed 100, nor the respirations 40 in the minute. The pain in the side required the use of morphia hypodermically more than once.

Chart of Temperature, &c. (Case II.)

Name, A. B.; *Age*, 13; *Disease*, Pneumonia; *Result*, Recovery.

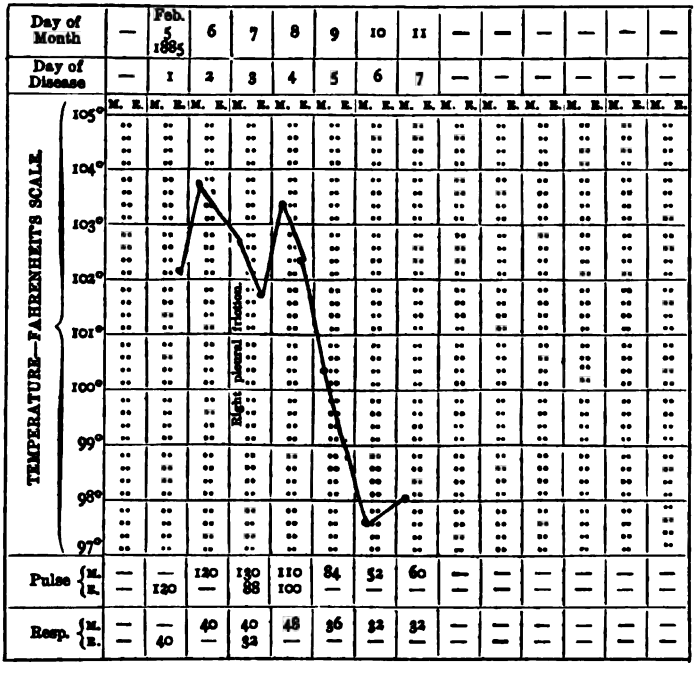


Of his case, it is only needful to say further that no material change occurred in the symptoms and physical signs until the evening of the ninth day, when crisis set in, marked by a sudden fall of 5° in temperature, with amelioration in his general condition. The base of the right lung did not, however, clear up for several days, and the respirations remained, for about a week, considerably above the average. Thenceforward he made an excellent recovery.

Case III.—On the 5th of February, the youngest boy, aged seven years, looked poorly, and his temperature was found to be 102·2°, pulse 120, and respirations 40. Next morning the temperature rose to nearly 104°, and the physical signs of pneumonia of the right base declared themselves. His case presented no features of severity. A crisis occurred on the evening of the fourth day, and was satisfactorily completed within twenty-four hours.

Chart of Temperature, &c. (Case III.)

Name, W. B.; *Age*, 7; *Disease*, Pneumonia; *Result*, Recovery.

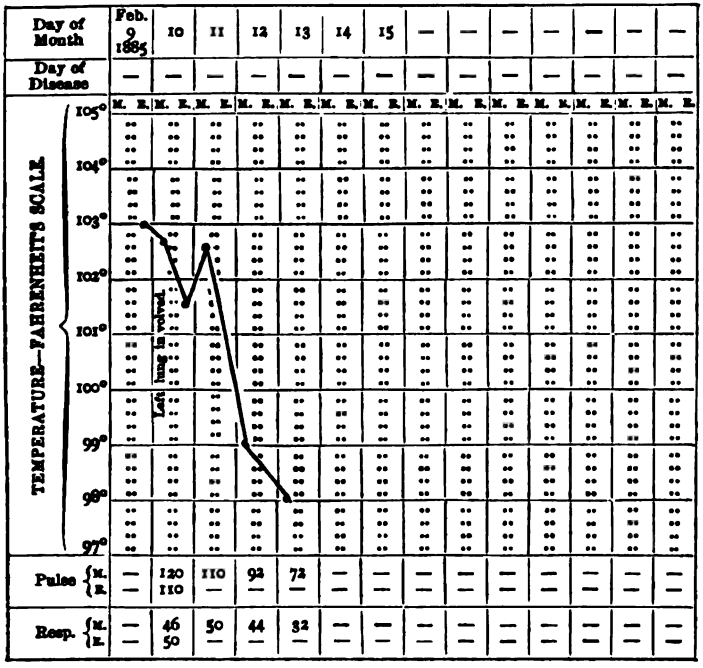


Case IV.—On February 9th, I was asked to visit an elder sister of these boys. She had been ailing for some time with a harassing cough,

and was looking badly; but, as long as she could, she had put off the evil day of seeing the doctor, and refused any attention until she became so ill that she was, perforce, compelled to give up. That evening her temperature was 103°, and she was racked with pains in the chest, side, and hips, necessitating the use of morphia hypodermically. Next morning her pulse was 120, respirations 46, and the base of the left lung was found to be consolidated. The real duration of her case is uncertain, but on the fourth day after I had seen her the temperature fell to normal. Some time, however, elapsed before she could leave her bed, or before convalescence could be said to be established.

Chart of Temperature, &c. (Case IV.)

Name, Miss K. B.; *Disease*, Pneumonia; *Result*, Recovery.



Lastly, I should mention that another of the boys, aged twelve years, was ailing, on February 13th and 14th, with slight malaise and pyrexia up to 100·2, yet without any local manifestation, and he forthwith recovered.

From a clinical point of view we may note, first, the marked differences which these cases exhibited in their course and manner of onset; and, secondly, the mode of death in Case I. Cardiac failure

is, I think, in many cases, the direction in which danger chiefly lies, and hence the maintenance of the heart's vigour should be uppermost in our plan of treatment; for patients often die from this cause who have abundance of breathing area still in their lungs, and unexpected death is apt to occur in the stage of gray hepatisation when fever has subsided and the patient seems in a fair way to recover. In all the above cases the base of the lungs was attacked. It is commonly taught that the lung inflammation is of a graver type when the upper third of the lung is attacked, but the conclusion deduced from the data collated by the Collective Investigation Committee[a] is in conflict with this opinion. As one result of their labours, the Committee report that, in regard to the upper portion of the lung as a seat of pnemonia:—1st. This locality is as favourable for the patient as any other (in its duration and mortality, indeed, it is more favourable than most). 2nd. No tendency is observable on the part of patients of phthisical family to exhibit pneumonia at this seat.

The question of main interest which is suggested by examples of multiple cases of pneumonia is in reference to the ætiology of the pneumonia. It may be asked—Are they instances of epidemic pneumonia, or of infectious pneumonia imported into a house, and spreading from person to person, or are they illustrations of so-called pythogenic pneumonia occasioned by sewer gas, fæcal accumulation, &c., and liable to affect several individuals so exposed?[b]

In reference to my own group of cases, I should state that the boy who died was tended, day and night, with extreme solicitude by his mother, and she remained in good health then and since. The sanitary state of the house is not above suspicion. It is old, and in bad repair; rats enter freely from it into the basement of the adjoining house, and I noticed, every time I passed through the hall, a foul heavy smell, to which I called attention.[c] There is no water-closet near any of the sleeping apartments.

On the other hand, it ought to be mentioned that the inmates had lived in the house for several years, and had generally enjoyed

[a] Report on Pneumonia. Vol. II. July, 1884.

[b] Cf. Drs. Grimshaw and J. W. Moore. Dubl. Journ. Med. Sci., May, 1875.

[c] Curiously enough, the Collective Investigation Committee remark upon this point that a comparison of the houses and districts where sanitation was reported "good" with those in which it was "indifferent" or "bad" brings out the result that the *lowest* mortality coincided with the *worst* sanitation. The 126 instances exhibiting bad sanitary conditions had a mortality of but 16, or 1 in 8, while the 144 under good sanitary conditions had a mortality of 26, or 1 in 5½ (Report, Vol. II., p. 35).

good health, and they were not, apparently, in a depressed state of health prior to the outbreak of pneumonia. About a year ago I attended one of the younger boys for a mild attack of continued fever, probably enteric fever.

In conclusion, it appears to be borne out by our present state of knowledge that a process of pulmonary inflammation (with enormous exudation) may originate in more ways than one—sometimes, perhaps, as the direct result of injuries (traumatic pneumonia), sometimes as the local expression of a constitutional febrile affection, and sometimes as the result of bacterial infection.

ART. II.—*The House Accommodation of the Artisan and Labouring Classes in Ireland, with Special Reference to Dublin and other Large Towns.* By THOMAS WRIGLEY GRIMSHAW, M.A., M.D.; Diplomate in State Medicine, Trinity College, Dublin; Registrar-General for Ireland; Vice-President of the Statistical and Social Inquiry Society of Ireland; Vice-President of the Dublin Sanitary Association; Consulting Physician to Steevens', Cork-street Fever, and the Dublin Orthopædic, Hospitals.

THE questions connected with the housing of the working-classes are at the present time attracting an unusual amount of attention, not only among sanitarians but also among all other members of the community who take a real interest in the physical and moral welfare of their less wealthy neighbours.

Sanitarians have long held that the house (or, more properly, the dwelling) must be the unit of sanitary work, just as the social reformer looks upon the family as his unit of work, and the moral reformer looks upon the single individual as the unit from which he is to help to build up a moral and religious community. Not only do the sanitary, social, and moral reformers resemble one another in their units of work, but the work of each is so much of an aid to the others that they become of necessity joint workers in the great cause of elevating and ennobling human nature.

It seems almost impossible that the elevated sentiments of morality and religion can exist in the filthy and squalid dwellings which at present constitute the so-called "homes of the poor," and it is not surprising that in many, many instances all sense of decency, morality, and piety has been blunted or has completely disappeared from communities living as large numbers of our fellow-countrymen are known to do at present.

It seems almost superfluous to reiterate such statements as the foregoing, but nevertheless, from what I have recently heard, I believe there are still many, and not even a few members of my own profession, who do not appreciate the gigantic nature of the evil, and the inability of present laws and their present mode of administration to cope effectually with it.

The extent of the evil and the difficulty in suggesting remedies led to the appointment by Her Majesty of the Royal Commission on the Housing of the Working Classes. The Commission was appointed last year, and has taken evidence with regard to England and Scotland and reported thereon, and have obtained evidence but not yet reported on the question so far as it concerns Ireland. It is the working of this Royal Commission, and the discussions which have arisen concerning its actions and its recent visit to Ireland, that have induced me to address this article to my brethren of the medical profession.

I find that an opinion has somehow got abroad that the existing sanitary laws, with their existing mode of administration, can cope with this evil, and have so far combated the insanitary condition of the dwellings of the working classes that a substantial improvement has taken place, and that if this improvement continues the evil will be gradually beaten down without any further action on the part of the Legislature, of the central, or of the local governing bodies.

I regret that I cannot concur in this opinion, and, further, I believe that neither are the laws strong enough nor is their administration active enough to effect a substantial improvement.

I think it may be safely said that there is more activity displayed in Dublin in sanitary work than in any other town in Ireland except possibly Belfast, where the particular kind of work I am dealing with is less required than in Dublin. Now, if in Dublin, with its large expenditure on sanitary work—its associations for stimulating the sanitary authorities and instructing the public—but little impression has been made on the insanitary condition of the dwellings of the working classes, it may be fairly assumed that little is likely to be done anywhere in Ireland without increased power and increased activity in administration.

The reports of the Irish Census furnish information which enables us to measure with a considerable degree of accuracy the alterations which have taken place from time to time in the housing of the people of Ireland. This system was devised by Sir

Thomas Larcom, and divided all houses into four classes. The fourth class includes all single-roomed houses, constituted of mud or other perishable material; the third, a better class, with from two to four rooms and windows; the second, a good farm house in the country, or a small town house, having five to seven rooms and windows; and the first class all of a better description than the preceding. In order to apply a test, so as to ascertain the conditions under which the people actually live, a further classification into four classes of accommodation is made. All families living in fourth-class houses are said to occupy "fourth-class accommodation," as also are all those in third-class houses containing more than one family, all in second-class houses containing more than three families, and all in first-class houses containing more than five families. "Third-class accommodation" consists of third-class houses occupied by one family each, second-class houses with two or three families, and first-class houses with four or five families. "Second-class accommodation" consists of second-class houses occupied by one family and first-class houses with two or three families. "First-class accommodation" consists of first-class houses occupied by only one family.

Now, it would, no doubt, be interesting to consider how the house accommodation of Ireland, taken as a whole, has altered during the past forty years, but this is a question which would take too much time and space to deal with in this place. Simple as the classification is, when the vast movement of the population of Ireland which took place after the great famine, the necessary decrease of demand for house accommodation which arose in consequence of emigration and deaths at and immediately after that period, are taken into consideration, it is evident that any statement which dealt with Ireland generally and did not deal with localities individually might prove misleading.

I shall therefore deal with the facts as illustrated especially by the case of Dublin. It is evident that the best test of the insufficiency of the house accommodation is obtained by ascertaining the number of families occupying "fourth-class accommodation." Comparing Dublin with the other large towns of Ireland it is found that the percentages of families occupying "fourth-class accommodation" in 1881, were as follows:—Dublin, 42·3; Kilkenny, 11·0; Drogheda, 9·7; Cork, 17·8; Limerick, 17·2; Waterford, 19·8; Belfast, 1·3; Londonderry, Coleraine, and Limavady, collectively, 5·9; Galway, 21·4.

It will be observed that Dublin is pre-eminently the worst in this respect.

TABLE I.—*Number of First-class Houses in each of the undermentioned Cities and Towns, distinguished according to Class of Accommodation enjoyed by the Inmates, as measured by the Number of Families in each House.* (*Exclusive of certain Public Institutions.*)

[Extracted from Report of Irish Census, 1881.]

Cities and Towns	Number of 1st Class Houses and of Families, according to *Classes* of *Accommodation*								Total	
	1st Class Accommodation [a]		2nd Class Accommodation [b]		3rd Class Accommodation [c]		4th Class Accommodation [d]			
	Houses	Families	Houses	Families	Houses	Families	Houses	Families	Houses	Families
Dublin City -	4,692	4,692	1,325	3,247	1,298	5,878	1,744	13,009	9,059	26,826
Kilkenny „ -	270	270	27	65	10	42	4	38	311	415
Drogheda, Co. of Town.	303	303	6	12	6	27	6	49	321	391
Cork City -	1,640	1,640	394	970	219	977	120	883	2,373	4,470
Limerick City -	688	688	135	328	77	346	65	471	965	1,833
Waterford „ -	534	534	57	132	33	148	53	431	677	1,245
Belfast, Borough of	2,912	2,912	329	789	35	146	9	58	3,285	3,855
Londonderry, Civic portion of County.	786	786	48	107	13	54	2	13	849	960
Galway Township	318	318	34	77	14	61	21	202	387	658

If we analyse the principal Census statistics for the CITY OF DUBLIN during the past forty years, we have:—

TABLE II.—*Showing, for the City of Dublin, the Number of Inhabited Houses, Population, Number of Families, Persons per House, Families per House, and Persons per Family, for each Census period from* 1841–81, *inclusive.*

	Inhabited Houses	Population	Families	Persons per House	Families per House	Persons per Family
1841 -	20,109	232,726	49,511	11·6	2·5	4·70
1851 -	22,276	258,369	57,318	11·6	2·6	4·51
1861 -	23,001	254,808	58,426	11·1	2·5	4·36
1871 -	23,896	246,326	58,327	10·3	2·4	4·22
1881 -	24,211	249,602	54,725	10·3	2·3	4·56

[a] One family in each house.
[b] Two or three families in each house.
[c] Four or five families in each house.
[d] Six or more families in each house.

From this it appears that the proportion of house accommodation, generally, to the population of the City of Dublin has materially increased. In 1841 the number of persons per house was 11·6; it was the same in 1851; in 1861 it was 11·1, or only 0·5 less, owing mainly to a decrease of population; in 1871 it was 10·3, or 0·8 less, owing again mainly to a decrease in population, although the number of inhabited houses had slightly increased; in 1881 the proportion was precisely the same as in 1871, as increase in population had been exactly met by an increase of inhabited houses, the increase in population being 1·3 per cent., and in inhabited houses also 1·3 per cent. Looking at the number of families per house we find it has fallen from 2·5, in 1841, to 2·3, in 1881, and is lower by 0·1 than it was in 1871, and by 0·2 than it was in 1861; but, on the other hand, the families were larger in 1881 than in 1871 and 1861, which accounts for the persons per house being the same, while families per house have diminished.

Let us now consider the nature of those houses and the accommodation which they afford. In Table III. is set out for each Census period the classification of the houses and their accommodation, according to Sir Thomas Larcom's plan, already described.

Table III.—*Showing, for the City of Dublin, the Number of Houses in each of Four Classes, and the Number of Families resident in each Class of Accommodation, according to the Classification adopted in the Census Reports, for each Census period from* 1841 *to* 1881, *inclusive.*

	Houses				Accommodation of Families			
	1st Class	2nd Class	3rd Class	4th Class	1st Class	2nd Class	3rd Class	4th Class
1841	10,171	8,289	1,494	155	5,605	8,412	12,297	23,197
1851	10,827	9,693	1,680	44	5,604	9,345	14,330	28,039
1861	10,688	10,486	1,740	21	5,158	9,815	16,163	27,290
1871	10,459	11,455	1,891	91	5,033	10,523	16,819	25,952
1881	9,067	13,066	2,664	14	4,692	11,013	15,660	23,360

From this statement we find that there were fewer first-class inhabited houses in the City of Dublin in 1881 than in 1841, and that the diminution has been mainly within the past ten years. In 1841 the number was 10,171; in 1851 it rose to 10,827; in 1861 it diminished; to again diminish in 1871; to show a further and

It will be observed that Dublin is pre-eminently the worst in this respect.

TABLE I.—*Number of First-class Houses in each of the undermentioned Cities and Towns, distinguished according to Class of Accommodation enjoyed by the Inmates, as measured by the Number of Families in each House.* (*Exclusive of certain Public Institutions.*)

[Extracted from Report of Irish Census, 1881.]

Cities and Towns	Number of 1st Class Houses and of Families, according to *Classes* of *Accommodation*								Total	
	1st Class Accommodation [a]		2nd Class Accommodation [b]		3rd Class Accommodation [c]		4th Class Accommodation [d]			
	Houses	Families	Houses	Families	Houses	Families	Houses	Families	Houses	Families
Dublin City -	4,692	4,692	1,325	3,247	1,298	5,878	1,744	13,009	9,059	26,826
Kilkenny „ -	270	270	27	65	10	42	4	38	311	415
Drogheda, Co. of Town.	303	303	6	12	6	27	6	49	321	391
Cork City -	1,640	1,640	394	970	219	977	120	883	2,373	4,470
Limerick City -	688	688	135	328	77	346	65	471	965	1,833
Waterford „ -	534	534	57	132	33	148	53	431	677	1,245
Belfast, Borough of	2,912	2,912	329	789	85	146	9	58	3,285	3,855
Londonderry, Civic portion of County.	786	786	48	107	13	54	2	13	849	960
Galway Township	318	318	34	77	14	61	21	202	387	658

If we analyse the principal Census statistics for the CITY OF DUBLIN during the past forty years, we have:—

TABLE II.—*Showing, for the City of Dublin, the Number of Inhabited Houses, Population, Number of Families, Persons per House, Families per House, and Persons per Family, for each Census period from* 1841–81, *inclusive.*

	Inhabited Houses	Population	Families	Persons per House	Families per House	Persons per Family
1841 -	20,109	232,726	49,511	11·6	2·5	4·70
1851 -	22,276	258,369	57,318	11·6	2·6	4·51
1861 -	23,001	254,808	58,426	11·1	2·5	4·36
1871 -	23,896	246,326	58,327	10·3	2·4	4·22
1881 -	24,211	249,602	54,725	10·3	2·3	4·56

[a] One family in each house.
[b] Two or three families in each house.
[c] Four or five families in each house.
[d] Six or more families in each house.

improvement has taken place in the accommodation occupied by the working classes of Dublin.

The great evil which requires abatement is the overcrowded and rotten condition of the tenement houses. Let us now inquire how far the families of the working population of Dublin are housed in such places. For all practical purposes of inquiry the houses occupied as tenements are confined to houses of the first and second class (see Tables I. and IV.). These houses were almost in all cases constructed to accommodate single families of the wealthy or well-to-do classes; they are now each occupied by many families.

Table IV.—*Showing, for the City of Dublin, the Number of Families occupying Fourth-class Accommodation, and residing in Houses of the First and Second Class, at each Census period from* 1841 *to* 1881, *inclusive.*

	Per cent. of Families in 4th Class Accommodation	Fourth Class Accommodation in First Class Houses			Fourth Class Accommodation in Second Class Houses		
		Houses	Families	Families per House	Houses	Families	Families per House
1841	46·9	1,503	11,864	7·9	1,903	10,151	5·3
1851	48·9	1,921	15,768	8·2	2,122	11,341	5·3
1861	46·7	2,070	15,964	7·7	2,071	10,371	5·0
1871	44·5	1,999	15,056	7·5	2,040	9,893	4·8
1881	42·7	1,744	13,009	7·5	1,983	9,575	4·8

This statement shows that there were, in 1881, 1,744 first-class and 1,983 second-class houses let in tenements, making in all 3,727 houses of this kind. The larger tenement houses were occupied by 13,009 families, or at the rate of 7·5 families per house, and the smaller houses by 9,575 families, or at the rate of 4·8 families per house. In all there were at the time of the Census 22,584 families, or over 100,000 persons living in these old, degenerated, and dilapidated houses. Comparing this state of things with that which existed at previous Census periods, we find that in both classes of houses the number of families occupying "fourth-class accommodation" has diminished since 1851. In the first class the diminution is considerable between 1871 and 1881; in the second class, during the same period, it is very slight. The improvement, however, in both cases has been progress
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considerable diminution in 1881, when it was only 9,067, or 1,104 less than in 1841, and 1,392 less than in 1871. This latter change is accounted for by the conversion of dwelling-houses into business premises, many houses previously occupied, partly as dwelling-houses and partly as shops, being completely unoccupied at night, and thus appearing as uninhabited houses on the Census night. This is also shown by the fact that the houses in the City of Dublin, in 1881, showed, as compared with 1871, an increase in the uninhabited houses of 2,001, or 189 per cent., but only 315 in the inhabited houses, or 1·3 per cent.

During the same period the second-class houses showed a steady and decided increase, as also the third class, but to a much less degree. The houses of the fourth class are practically absent in Dublin, and never were very numerous. There was a slight error in the making up of the third class in the Dublin Census of 1871, by which some of the houses in this class were transferred to the fourth class.

The second division of Table III. is of more importance than the first, when looked at from a sanitary point of view. It will be observed that the number of families occupying "fourth-class accommodation" has steadily diminished since 1851; this is also the case in those occupying "first-class accommodation," but, except for the third class in 1881, exactly the contrary is the case in the other two classes of accommodation. It is, however, an unpleasant feature that the number of families occupying "fourth-class accommodation" in the City of Dublin was almost the same as in 1841; indeed, it is slightly larger. Bad as this is, it is not quite as bad as it looks, as will be seen further on.

The steady improvement in the class of accommodation occupied by the poor is a gratifying feature, demonstrated by this portion of the table. It is important to note that this improvement has been steady and continuous for forty years, being interrupted only by the great famine, which was manifestly the cause of the sudden increase of families inhabiting the lowest class of accommodation, which appears according to the Census of 1851. At this Census all the large towns showed a sudden increase of population, owing, no doubt, to the influx of the starving people from the country.

I have shown how the house accommodation has been generally apportioned to the population during the past forty years, and, I think, proved that a steady, gradual, but, nevertheless, slight

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If we resort again to Table III. we see that the families living in "fourth-class accommodation" have decreased by 2,592 (over 11,000 persons) between 1871 and 1881. This corresponds very closely with the numbers 2,365 for families, and about 10,600 for persons, which have disappeared from the tenement houses in the decade. According to Table III. the number of families occupying second-class accommodation has increased by 490, or about 2,250 persons, which tends to show that a large number of persons have moved out of the old tenement houses and obtained accommodation of a better class. Still we have 100,000 people housed in as wretched quarters as can well be imagined.

The concentration of families in single houses is in many cases very great. Thus, there were in Dublin, in 1881, 102 houses of the first class, containing 1,020 families. There were many more houses containing larger numbers of families, the details of which will be found in Table VIIIA. of the Dublin Census Book.

In the foregoing remarks I have used Dublin as an example, but in the older towns in the South of Ireland—for example, Cork, Limerick, and Waterford—very similar conditions will be found to exist, differing somewhat in degree. In the newer towns of the North of Ireland—such as Belfast—the evil of large tenement houses does not exist to any considerable extent.

I have shown that there has been a general tendency of the working population during the past thirty or forty years—especially during the past thirty years—to remove from the fourth-class accommodation to better quarters. It would appear that this movement has not depended to any considerable extent upon the pressure from improved sanitary law or improved sanitary administration, although sanitary enactments and their improvement may have done a little during the decade 1871–81. That this is so will be pretty evident if we consider the dates of the passage of the principal Sanitary Acts. In 1848 the first important Sanitary Act was passed and partially extended to Ireland. This Act, it is well known, proved a dead letter. It was quite

permissive, and there was no adequate administrative machinery. Passing over many smaller measures we come to the Public Health Act of 1866, which was also permissive, and little action was taken under it, although under this Act an attempt was made to establish a sanitary department for Dublin. In 1851 the condition of the housing of the working classes has been shown to be worse than in 1841, notwithstanding the Act of 1848. Comparing 1871 with 1861 we find that the families occupying fourth-class accommodation had remained pretty much the same; the number of large tenement houses and the families residing therein had scarcely diminished, or become less densely populated—in fact, the improvement had not proceeded any faster. Although the Public Health Act of 1866 and Mr. Torrens' Act of 1868, for the improvement of the dwellings of the working classes, had come into force during the decade, the improvement was not proportionally greater than between 1851 and 1861, when no new sanitary statutes were enforced. Between the years 1871 and 1881 three great sanitary measures were passed into law—namely, the Public Health Acts of 1874 and 1878 and the Artisans' and Labourers' Dwellings Acts of Sir R. Cross in 1875 and 1879. The former made the laws compulsory which had been hitherto permissive, at the same time amending and improving them. By the Act of 1878 all the sanitary laws were consolidated, amended, and strengthened, and Sir R. Cross's Act for the first time conferred extensive powers for the clearing of areas occupied by unhealthy dwellings, and providing better accommodation for the persons so displaced. A reference to the statistical statements I have previously made will show that all these useful measures did not materially, if at all, accelerate the rate of movement of the persons from "fourth-class accommodation" into better conditions. The decrease of families occupying fourth-class accommodation between 1861 and 1871 was 1,338, and between 1871 and 1881 it was 2,592. No doubt the improvement which has been gradually taking place has been caused by the general rise in local requirements promoted by improved education and increased wages, together with the fact that considerable numbers of the old tenement houses are swept away by the extension of manufactories, such as breweries and distilleries, new markets, &c. Again, prior to the taking of the Census of 1881 the Messrs. Guinness had provided house accommodation for many of their workmen and their families, and the Dublin Artisans' Dwellings Co. had already

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permissive, and there was no adequate administrative machinery. Passing over many smaller measures we come to the Public Health Act of 1866, which was also permissive, and little action was taken under it, although under this Act an attempt was made to establish a sanitary department for Dublin. In 1851 the condition of the housing of the working classes has been shown to be worse than in 1841, notwithstanding the Act of 1848. Comparing 1871 with 1861 we find that the families occupying fourth-class accommodation had remained pretty much the same; the number of large tenement houses and the families residing therein had scarcely diminished, or become less densely populated—in fact, the improvement had not proceeded any faster. Although the Public Health Act of 1866 and Mr. Torrens' Act of 1868, for the improvement of the dwellings of the working classes, had come into force during the decade, the improvement was not proportionally greater than between 1851 and 1861, when no new sanitary statutes were enforced. Between the years 1871 and 1881 three great sanitary measures were passed into law—namely, the Public Health Acts of 1874 and 1878 and the Artisans' and Labourers' Dwellings Acts of Sir R. Cross in 1875 and 1879. The former made the laws compulsory which had been hitherto permissive, at the same time amending and improving them. By the Act of 1878 all the sanitary laws were consolidated, amended, and strengthened, and Sir R. Cross's Act for the first time conferred extensive powers for the clearing of areas occupied by unhealthy dwellings, and providing better accommodation for the persons so displaced. A reference to the statistical statements I have previously made will show that all these useful measures did not materially, if at all, accelerate the rate of movement of the persons from "fourth-class accommodation" into better conditions. The decrease of families occupying fourth-class accommodation between 1861 and 1871 was 1,338, and between 1871 and 1881 it was 2,592. No doubt the improvement which has been gradually taking place has been caused by the general rise in local requirements promoted by improved education and increased wages, together with the fact that considerable numbers of the old tenement houses are swept away by the extension of manufactories, such as breweries and distilleries, new markets, &c. Again, prior to the taking of the Census of 1881 the Messrs. Guinness had provided house accommodation for many of their workmen and their families, and the Dublin Artisans' Dwellings Co. had already

housed 331 families, but not in connexion with the Acts for the improvement of the dwellings of the working classes.

Anyone who has taken the trouble to fully investigate the subject and visit the dwellings of the poor must be aware that "fourth-class accommodation" is a quite unsuitable kind of dwelling for human beings. Now, how do our prospects stand of getting rid of this under the system working in Dublin, and there is no other at work in Ireland? In Dublin the number of families occupying fourth-class accommodation has fallen from 28,039 to 23,360, or 4,679 in thirty years. The figures have been pretty steady, but only amount to an average of 156 per annum. There were still in 1881 no less than 23,360 families housed under the worst conditions. At this rate of improvement it would take 150 years to provide for those in Dublin who are living under admittedly unsuitable conditions, not to speak of the number of those occupying "third-class accommodation," many of whom are but little better housed.

It may be said, and no doubt with some truth, that prior to 1881 Sir R. Cross's Act had little time to work, and that we cannot look for improvement until after 1881, and that the result will appear in 1891, when the next Census is taken. This may be so, but it must not be forgotten that the working of this Act has proved so difficult that but little has been accomplished under its provisions, and that it was want of success of this Act in England, together with other matters, which led to the appointment of the Select Committee of the House of Commons in 1881 and 1882, and the issue of the Royal Commission of 1884. No doubt in Dublin two areas have been cleared under the Act—the Coombe area, which was occupied by a population of 984 persons, and the Plunket-street area, occupied by a population of 1,619 persons, in all 2,603 persons, or about 578 families, all of whom may be said to have been living in "fourth-class accommodation." It is now nearly ten years since the Act under which these clearances were effected came into force, and this is all that has been accomplished, after great trouble, long delay, and enormous expense. In Dublin the work has been cheap and easy, compared with many other places. If this work could be expected to go on something considerable would be gained, but the delays and difficulties have been so great as almost to be insurmountable. Shortly after the passing of the Artisans' and Labourers' Dwellings Act of 1875 Dr. Mapother, the consulting sanitary officer of Dublin,

condemned twelve areas in Dublin as unhealthy, which, therefore, should have been dealt with under the Act, but only the two mentioned, out of the twelve, have been yet touched, and there is little prospect of the remaining ten being dealt with.

We can, therefore, expect but little from these special Acts. Now, what can be done under the ordinary Sanitary Acts? All the general sections of the Public Health Act may be said to be applicable to tenement houses as well as to houses of a better class.

There is, however, one section of the Public Health Act, 1878, which provides for the special regulation of tenement houses, and is as follows:—

"*By-laws as to Houses let in Lodgings.*—The Local Government Board, may, if they think fit, by notice published in the *Dublin Gazette*, and in some newspaper or newspapers circulating in the district, declare the following enactment to be in force within the district or any part of the district of any sanitary authority, and from and after the publication of such notice such authority shall be empowered to make by-laws for the following matters (that is to say):—(1.) For fixing and from time to time varying the number of persons who may occupy a house or part of a house which is let in lodgings or occupied by members of more than one family, and for the separation of the sexes in a house so let or occupied. (2.) For the registration of houses so let or occupied. (3). For the inspection of such houses. (4.) For enforcing drainage and the provision of privy accommodation for such houses, and for promoting cleanliness and ventilation in such houses. (5.) For the cleansing and limewashing at stated times of the premises, and for the paving of the courts and courtyards thereof. (6.) For the giving of notices and the taking of precautions in case of any infectious disease."

This section can be enforced by permission of the Local Government Board; it has been enforced in Dublin, but in some other Irish towns containing tenement houses it is not, I believe, in force. This section of the Act gives the local authority power to make by-laws for the regulation of tenement houses as to:—The number of persons who may occupy such a house or part of a house; the separation of the sexes; for the registration and inspection of such houses; for keeping such in a cleanly state; for the enforcement therein of the provision of privy or closet accommodation, and means of cleansing in proportion to the number of occupiers; for cleansing, ventilating, and limewashing at stated times.

Now, looking at these provisions, it is quite clear they are all excellent in themselves—the provisions as to cleanliness and lime-washing, &c., can be enforced—but, on the other hand, how can the provisions regarding sufficient space and the separation of the sexes be enforced in the existing houses where the space does not exist for these purposes, and, as I have already shown, new and suitable houses are not being provided at a sufficient rate? Again, how can privy or closet accommodation be provided in these cases, which are only too numerous, when proper sites for such conveniences are not available in connexion with such premises? Notwithstanding these difficulties the Corporation of Dublin have made the attempt, and the subjoined by-laws have been issued for the regulation of the tenement houses. I give them as an example of the best attempt that can be made under existing circumstances. They are dated November 11th, 1883:—

"By-laws.—For houses and parts of houses let in lodgings, and occupied by members of more than one family within the City of Dublin, under the Public Health (Ireland) Act, 1878, other than common lodging houses, within the provisions of the said Act, made by the Sanitary Authority of the City of Dublin.—Every house or part of a house let in lodgings, or occupied by members of more that one family, shall be subject to the following regulations:—

"1. *Cubic Space.*—That no greater number of persons shall occupy any room in any such house than can be accommodated with 300 cubic feet of space for each (for example—a room 10 feet high, 15 feet long, and 10 feet wide contains 1,500 cubic feet of space, and may, therefore, accommodate five persons.)

"2. *Officers duly authorised may inspect, &c.*—That said authority, or any of its officers, may enter and inspect any such houses, or any apartments or appurtenances thereof, without let or hindrance, between the hours of 10 a.m. and 4 p.m., for the purpose of carrying into effect these regulations and the provisions of said Act, or in special cases at any other time, upon the signed requisition of the Chairman of the Public Health Committee, by vote of the Committee, and not otherwise; and may inspect and measure the dimensions of each room, and affix on the door thereof a description of the cubic contents of such room, in a form to be provided by such authority, and any removal or defacement of such certificate shall be deemed a breach of these regulations.

"3. *Owner to provide and maintain sufficient ash-pit, privies, and pure water; maintain premises in repair; provide for ventilation and lime-washing.*—That the owner of every such house shall have supplied thereto, and shall maintain a properly constructed ashpit and privy, water-closet

or earth-closet, or privies or water-closets sufficient to accommodate the inhabitants thereof, and a properly-trapped and ventilated house-drain communicating with the main sewer (if any within 100 feet from such house), and if no such main sewer, then with a proper cesspool; and shall cause privies, water-closets, ashpits, cesspools, and house drain to be kept cleansed and in proper repair; and shall also provide for each such house a sufficient supply of pure water; and keep the roof, external walls, windows, and chimneys of such house in reasonable repair, impervious to wet; and shall cause each window of such house to be made capable of being opened from the top or raised from the bottom, or otherwise opened to the extent of the half of each sash; and shall cause the entrance and hall, basement story, rooms, staircases and lobbies thereof to be put and kept in good repair, and in a cleanly and ventilated state; and no room shall be let or used as a sleeping apartment unless it shall have at least one window; and all yards, halls, staircases, passages, and rooms, and cellars not papered or oil-painted, he shall cause to be lime-washed at least every six months; and shall cause the courts and court-yards of such houses to be paved with such materials and in such manner as the sanitary authority shall direct; within the provisions of this regulation the word owner shall mean the person or persons who, for the time being, shall be in receipt of the rents of the lodgers, or other occupiers of such premises.

"4. *Occupier shall not throw from windows foul liquid, &c., and shall not injure requisites.*—That no occupant residing in any such house, nor any other person, shall throw from any window or other opening to or upon any roof, shed, yard, passage, or street, any water, foul liquid, or other offensive matter or thing, or shall throw or drop same in or upon any common entrance, staircase, lobby, street, or place other than that provided for the proper deposit thereof; and every occupant or other person shall so use any requisite in, or appurtenant to, any such house as not to injure, or break, or render ineffective, or put same out of order.

"5. *Owner to report case of infectious disease.*—That in the case of any infectious disease occurring in any house in which lodgers are received it shall be the duty of the owner of such house to report same to the Public Health Committee, with a view to the disinfection of the premises, and to the removal to hospital, if necessary, of any person suffering from such disease.

"6. Every person who shall offend against any of the foregoing by-laws shall be liable for every such offence to a penalty not exceeding five pounds, and in case of a continuing offence, to a further penalty not exceeding forty shillings for each day after written notice of the offence from the sanitary authority. Provided, nevertheless, that the justices in court before whom any complaint may be made, or any proceedings may

be taken in respect of any such offence, may, if they think fit, adjudge the payment as a penalty of any sum not less than the full amount of the penalty imposed by this by-law."

Now, if we look at these by-laws, it will be perfectly clear that they are drawn up under a full sense of the impossibility of enforcing anything better. No. 1 requires 300 cubic feet of space for each inhabitant of a tenement house, and gives an example. Anyone who knows anything of the subject is aware that so small an amount as 300 cubic feet is quite inadequate, and that persons living in such a confined space are sure to suffer in health. There is no use in asking for more, because it is not to be had, therefore the sanitary authority "levels down" to the insanitary condition, and, as it were, approves of this state of things. No. 2 provides for inspection, but carefully clogs the conditions of inspection at any hour other than between 10 and 4 o'clock in the day, so that inspection at any other hour is practically impossible—in fact, the idea of a meeting of the committee of the sanitary authority, a debate on the question, a division, and an instruction to the chairman to sign an authority to empower one inspector to visit a house at 9 o'clock in the morning or 6 o'clock in the evening, not to speak of at night, is so glaring an absurdity that it would appear that the persons who drew up the by-law did so with the special object of making it inoperative. I have had a great deal of experience in inspecting the dwellings of the working classes, and know that between 10 and 4 in the day are about the most unlikely hours of the whole twenty-four in which to detect sanitary shortcomings. This is levelling down with a vengeance, and without the excuse of necessity. No. 3 contains some more admirable examples of levelling down. A properly constructed privy, privies, &c., are to be provided. On looking at this by-law the casual reader would imagine that the words "sufficient to accommodate the inhabitants" would imply a privy or closet for each family, those who know the difficulties of enforcing such a rule would say one for two or one for three families; but no such thing—the proportion of accommodation of this kind is not according to any rule; sometimes four or five families have but one privy, and I have not found more than two attached to any tenement house during my recent visits. I hold that one privy or closet to each family is *essential* for decency and cleanliness, and in this I am supported by the experience of the Dublin Artisans' Dwellings Co., who tried the experiment of having closets used jointly by more than one

family. The experiment was a disastrous failure, and the company had to provide a closet for each family. This by-law also contains provisions about the windows and the opening of the same, but no provision whatever about the size of the windows. The rest of the by-laws are admirable if stringently enforced, but the levelling-down examples which I have given discredit the whole code. The most notable omission in the by-laws is the absence of all provision for the separation of the sexes, and thus the authority by this omission seem either to overlook or sanction one of the greatest of the evils that exist in the tenement houses.

I hold that by-laws solemnly issued by any authority which contain provisions which in themselves are not in accordance with the recognised laws of health and decency are mischievous instead of beneficial. I shall, no doubt, be met by the argument that there is no use in asking for 600 cubic feet for each person when only 300 are to be had, or for a closet for each family when there is only room for one closet for four or six families. This must be admitted; but why not treat this question in the same way as that of the separation of the sexes, and say nothing about it, or say we require as near 600 feet cubic space as can be had, and reserve the power of accepting less under special circumstances, and similarly with the closet question, but let no sanitary authority either express or imply its approval of insanitary conditions. These are matters in which a safe compromise cannot be made, and, therefore, should not be attempted.

I have so far used official statistics as an example of the want of progress made during the past thirty years. I would here refer to some facts published by the Superintendent Medical Officer of Health for Dublin within the past few weeks. He says that, "from the 31st of August, 1879, to the 31st of December, 1884, the total number of houses detenanted and closed amounted to 1,857." . . . "No doubt a large number of the above-mentioned houses were, by being re-built or extensively repaired and improved, allowed to be again occupied, but very nearly as many have been permanently closed." This is the work of four and a half years, or at the rate of 426 houses per annum, about half of which, or 213, we may infer from the foregoing quotation, were intended to be permanently closed, the other 213 being repaired and re-opened. Now, has it occurred to the writer of the above quoted paragraph that numbers such as these would only represent the natural decay and requirements annually of the 7,234 houses which he mentions

further on in his paper? When the age and dilapidated condition of the houses occupied as tenements is taken into consideration, the rate of degeneration must be very great. I believe it is a sort of aphorism among architects and builders that the rate of degeneration of a house is "one per cent. per annum." Now, if this rule were applied to the old tenement houses—the defects of which are truly described by Dr. (now Sir Charles) Cameron in his interesting pamphlet as in a "dilapidated condition; crooked walls, bad roofs, very old worm-eaten floors, rickety stairs, windows ill-fitting in their frames, and often broken"—it is pretty clear that of the 7,234 houses referred to, 72 would disappear spontaneously every year if left to themselves; but the depreciation of these houses must be many times more than "the one per cent. per annum," and therefore the repairs and renewals mentioned by Dr. Cameron can scarcely be considered equal to the depredations of time among the Dublin tenement houses. I consider this report concerning the Dublin tenement houses as strongly confirming all the deductions I have made from the Census returns. I may also add that anyone who, like myself, is familiar with the state of decay of the old tenement houses of Dublin knows that many pass into ruin annually without any action on the part of the authorities to close them. They close themselves and fall into ruin.

I shall now consider the question, so far as Dublin is concerned, from a personal as distinguished from a statistical and technical point of view. I hope I may not appear too egotistical when I lay claim to a greater general knowledge of these matters than many others who have taken an active and intelligent interest in the housing of the working classes of Dublin. It is now over twenty years since I began to inquire into this question, and I have from time to time continued my observations up to the present time. My latest investigations have been during the month of May, 1885, and were undertaken in consequence of the knowledge that I might be examined as a witness before the Royal Commission which recently sat in Dublin.

I have shown from published documents that little improvement was to be expected in the old tenement houses—in fact, it was easy to guess at what might be found by personal visits.

The result of my visits has been that I am of opinion that except in the cases where the houses have been completely removed and re-built, which are extremely rare, there is practically no improvement in the structure of the tenement houses of Dublin. Many

are absolutely worse than when I first knew them. A distinct improvement has taken place in the state of the back-yards, ash-pits, and privies; there are much fewer accumulations of filth in and around the houses than formerly; there are comparatively few overfilled, but still there are many filthy, ashpits; there are fewer accumulations of filth in basements of houses than formerly. Not only are the old tenement houses not improved, and in many cases worse than twenty years ago, but houses which were formerly occupied by one respectable family each, have now become tenement houses, occupied by many families. In 1872 I published an account of the conditions under which fevers prevail and spread among the occupiers of the tenement houses in Dublin, and in it will be found some typical examples of the condition of these houses; others will be found in the reports of the Dublin Sanitary Association. These conditions existed twenty years ago, and exist still, not perhaps in the same places, but although they often do, elsewhere and under precisely similar circumstances.

It would be an unnecessary occupation of time and space were I to give detailed examples of the defects I have noticed during my recent visits, nor indeed would it be advisable to be too particular; for on no less than three occasions I have had the good fortune to escape legal proceedings for having too openly denounced the sanitary shortcomings of Dublin tenement houses. I found, not far from St. Patrick's Cathedral, two courts—"yards," as they are termed—at the rere of houses, and entered by passages under or, more properly speaking, through the houses; they were filthy and overcrowded, and with the filthiest possible privy accommodation. A similar court was found at no great distance in a neighbouring street. In Marrowbone-lane, a court described in the *Freeman's Journal* of September 15th, 1871, I found in almost the same condition as when I visited it with the *Freeman's* reporter—even the "goats, pigs, and hens," described in that report, were there; and but for the long interval which had elapsed between 1871 and 1885, they might almost have been recognised as the same animals. I found courts in Cork-street the same as twenty years ago, and others elsewhere. I found houses which had been closed as unfit for habitation, I think, about ten years ago, open and inhabited. I found a privy *in* a house where it had been fifteen years ago. In one place I was attracted to a stair descending. I, accompanied by a friend, followed the stair, which ended in a cellar, which apparently was not always occupied; it was probably a den where

some outcasts slept at night. This cellar opened on a small, filthy yard, approached by two steps. At the foot of the lower step, and welling up towards the entrance, was a pool of liquid filth, black and stinking. On the step sat a little girl of eight or ten years old, with a baby on her lap, and beside her another child at play. The children looked wretched, were badly clothed, and filthy. I persuaded them to leave, and go and play in the street above, which, although dirty, was clean, airy, bright—indeed a Paradise compared with the filthy den in which we found the little ones.

I have no wish to draw harrowing pictures or exaggerate the shocking condition of things which does exist, but I wish my medical brethren to know that such things do exist, although a Public Health Act was passed so long ago as 1848, increased in stringency in 1866, made compulsory in 1874, amended and extended in 1878, and an Act for the Improvement of Artisans' and Labourers' Dwellings passed in 1875, and was improved in 1879.

There are some who believe a great deal can be done, and has been done, to abate this great evil under the present powers; but I would say to all such optimist sanitarians—Look at the state of things as it exists, at the time which has elapsed, and the number of Acts of Parliament which have been passed, and let them ask themselves where is the success. I admit much has been done; but the enemy has only been kept at bay, not driven back. Very little has been gained, although not much lost.

There must be no mistake about the matter—no half measures. The difficulties must be removed by legislation; improvements must be made cheaper and easier; little mercy must be shown to the evil-doers, and great encouragement and assistance given to those who wish to do well in the direction of providing dwellings for the working classes.

If when the older Sanitary Acts had first come into force they had been energetically enforced, a great deal might have been done; but since 1848 the evil has been steadily increasing and no determined attempt made to grapple with it. If even in 1866, when for the first time, under the Public Health Act of that year,* power was given to regulate tenement houses, that power had been exercised, the evil would have been much less than it now is. All these chances have been neglected, and the public must now make up their minds to bear the expense caused by the neglect of past

* 29 & 30 Vic., Cap. XC., section 35. The Sanitary Act, 1866.

generations, and steadily, determinedly, though slowly it must be, remove the evils which the community has permitted to arise, and which the community must now abate.

The questions connected with the removal of these evils are essentially non-professional, and I shall not, therefore, attempt to discuss them here.

In conclusion, I would appeal to all my professional brethren to aid, as far as in them lies, the great movement now in progress for the improvement of the dwellings of the artisan and labouring classes. I believe in this respect our profession knows more, and has more influence, than any other section of the community. Let them express their opinions fearlessly. Let there be no half-hearted advice or levelling down to meet sanitary shortcomings. Let us all state positively what we believe the standard of health should be, and in no way lower that standard because it is not immediately attainable. A great deal of patience and up-hill work is necessary, but let us not think, as many seem to think, that because a little has been done much has been already accomplished, and that our methods of working are adequate to abate this great evil. If by the foregoing remarks I succeed in inducing my professional brethren to look after this as the most pressing sanitary question of the day, I shall have accomplished the main object I have in view.

ART. III.—*Basic Aural Dyscrasia; being an inquiry into a condition of system disposing to Aural Disease, now for the first time described as the Basic Aural Dyscrasia, involving an explanation of the mode of causation of Tinnitus Aurium, and a description of a hitherto unnoticed form of Deafness—Vascular Deafness.* By ROBERT T. COOPER, M.A., M.D. Univ. Dubl., London.

[*Continued from Vol. LXXIX., page 509.*]

THE chronic diseases of the ear, and we believe, but to a less extent, the womb as well,[a] involve their organs in an inflammatory process that requires for its successful dispersion the application of as much warmth of every description as is possible; at all events warmth, constantly and perseveringly applied, is essential for the complete rehabilitation of the ear when it has been subjected to a long continuance of the exhausting and degenerating inflammations that affect its circulation. This I would lay down as a clinical axiom, as irrevocable as it is possible for laws in medicine to be—that

[a] *Vide* Tilt. Uterine Therapeutics. Pp. 56–58. John Churchill & Sons, London. 1868.

all ear diseases, whether acute or chronic, are improved by the application of warmth, and aggravated by that of cold; and, I believe, in making this statement, I am largely, if not unanimously, supported by all distinguished aural physicians. Thus, Dr. A. Guye,[a] of Amsterdam, says :—"I have seen people with slight growth of hair, in whom the wearing of a wig was followed by decided improvement in hearing. And what," he asks, "is more natural than that an organ which, in its normal condition, is so little exposed to variations in temperature, should endure such exposure badly, and undergo a loss of its functions?" In one important particular, then, aural medicine does not labour under the reproach that attaches to other departments of medical practice. The aurist can meet him who asserts the superior scientific claims of surgery, by proving that in one respect we have the advantage, and that we are not exercised by at least one perplexing problem. Ear diseases, then, present us, uniformly, with the purest variety of a localised inflammatory debility to be met with in the whole range of medicine, this being quite accounted for by their pathology.

Furthermore, if the chronic diseases of the ear, manifested to us as they so largely are by the symptom, deafness, belong to the inflammations, is it not in perfect accordance with fact that each case of such chronic inflammation has its counterpart among the acute diseases? That is to say, that just as acute inflammations possess, in each individual instance, a plainly marked and prominent character, requiring for descriptive purposes such distinguishing appellations as rheumatic, gouty, scrofulous, syphilitic, diphtheritic, so may not each case of deafness be impressed by, but to a much less extent, a similar individual disease tendency, the miasmatic character of the person so afflicted, and is not such co-extensive with disease-force of every description?

The idea would be that, as with the ear, so with other organs, no chronic disease exists that has not its counterpart among the acute maladies. Certainly, I have seen acute psoriasis, and acute eczema is common enough. Are there—for the reverse must be held to be true—such unlikely diseases as a chronic form of small-pox, scarlatina, and measles, and by what indications are they known? This is by no means a ridiculous question to ask, seeing that clinical *investiganda* are calculated to stimulate the most useful form of medical inquiry.

But the question ought not to be so much—Is there chronic small-

[a] Archives of Otology. P. 232, 1880. Art. 'On Menière's Disease."

pox, &c.? as—Are chronic diseases specially modified by the small-pox, scarlatina, measles, &c., to which they date their inception? And in my own practice I am emboldened to ask such a question, by observing that some chronic ear-diseases, dating back to a scarlatina, require, for their successful dispersion, different remedies from those that attribute their onset to small-pox.

To return to the bruits. If, in their earlier stages, these bruits betoken an irritation or inflammatory condition of the coats of the blood-vessels, they would naturally be found, if looked for, in such cachexiæ, chronic and acute, as are attended with inflammatory action settling especially upon the vascular structures. Consequently, we shall find them present in pyæmia, erysipelas, parotitis, lymphadenitis, the exanthemata, febrile influenzas, in puerperal fever, and other *post partum* and catamenial febrile attacks, and, in fact, in all affections in which there is a diffused involvement of the vascular tissues—in other words, in those affections where the inflammatory tendency is of such a nature as finds expression in sympathetic disturbance. In every one of the diseases so characterised I believe these bruits, from actual observation at the bedside, to be in much greater prominence than the descriptions of such disorders in books would imply.

Hence, the very interesting and important conclusion arrived at is that the imbibition into the system of mephitic vapours and various forms of micro-organisms* is accountable for the acute affections from which chronic deafnesses, or rather inflammatory changes in the ear, take their origin; and the conclusion is equally legitimate that the high degree of initial inflammatory action is by no means necessary for the development and maintenance of these long-lasting and distressing complaints. So that it would appear that these obscure departures from health that are represented by the chronic aural affections are in every way like the disturbances that disease produces in other parts of the system, only that the ear, owing to its anatomical construction, does not display such obvious inflammatory manifestations as are so easily demonstrable in other organs of the body.

As we hope later on to prove, however, the early symptoms pointing to chronic aural involvement are as easily recognised, and, when recognised, as easily arrested, as are those that usher in and culminate in morbific disturbance of other organs.

* With reference to this, see a very interesting paper by the late Dr. J. Patterson Cassells, in Edinburgh Medical Journal, April, 1878, on Sewer-Gas and Ear-Disease.

There is great reason to suppose that aural affections, like many other varieties of chronic disease, are on the increase; this view of their ætiology would afford an adequate explanation of the fact; for, with the modern tendency of population to crowd together, individuals are exposed to contaminating influences not otherwise in operation. Obviously, the same causes operate to enfeeble the process of adult dentition, of which imperfectly developed wisdom teeth are the expression, and it is a trite observation among dental surgeons that civilisation is rapidly causing the disappearance of these organs.

We wish it, however, to be understood that we by no means take the view that living germs are the exclusive cause of these or any other diseases; their influence would appear to preponderate over that of other agencies exercising a hurtful and injurious effect upon the human constitution; more than this we do not think it wise to predicate, at least as to aural diseases. The effect of the excessive use of alcohol in causing a pyrexial disposition in the system must also be considered. Dr. Alfred Carpenter and others attribute to it a tendency to fatty degeneration throughout the circulatory organs.

Without going further into this matter, the important lesson in general medicine to be learned from this inquiry is that departures from health, not recognisable by the patients' complainings, are more frequent than is generally admitted, and that these may exercise a destructive influence—a death, in fact—upon the organs of special sense, as well as lead to the disintegration of tissues, the cohesion of which is necessary to the maintenance of life itself.

As these unnoticed variations from health are often due to minute but "diagnosable" and easily curable degrees of arteritis, phlebitis, carditis, and the like, the inference is plain that increased inquiry into disease of every description convinces us more and more of the imperative necessity for a periodical examination of the human body, to be undertaken in the interests not alone of *health*, but *à fortiori* of longevity.

The future of preventive medicine will, I feel assured, depend upon the proper recognition and interpretation of the phenomena of sympathetic vaso-motor disturbance.

We cannot pass on without one more reference to a question of interest for general medicine mooted by this investigation.

It is well known that among the very obscure points the practitioner of medicine may be called on to decide is that of the cause

of a fever in a child in whom the age or the prevailing cerebral disturbance renders the little patient incompetent to express his feelings. Some very interesting examples of cases of this description, in which the ear proved to be the *fons et origo mali*, after all sorts of haphazard trials had been undertaken to dislodge imaginary offending *materies* from the intestinal canal, and also to relieve dentition, are given in Mr. Hinton's suggestive little work.[a] One of these cases, furnished him by Dr. Wilks, was particularly painful. It occurred in the child of a medical practitioner, and not until after a month from the commencement of the boy's illness, and when the child was wasted to a mere shadow, did a discharge occur, "first from one ear and then from the other," with, after an interval of a day or two, perfect remission of the symptoms.

It is all very well to say, "Examine the ears," but it is by no means easy to examine the tympanal membranes of a child rolling about in delirium; and, besides, before undertaking such examination, it surely is desirable to have some grounds for supposing the ear to be involved.

It is in such positions of perplexity that I trust this investigation will prove of use to the family physician, and that he will find, where aural mischief is in the ascendant, that these bruits are a more than usually pronounced feature of the case.

The other day a little deaf mute (supposed), a boy of two years, was brought to me for an opinion upon his case. On examination of the cervical blood-vessels, I found loud bruits present on both sides, and pronounced that certainly there existed a weakness of the ears, and that in all probability he had had some kind of feverish attack, and that perhaps the condition had come on after birth.[b] The parents' reply was suggestive:—"Oh, yes, he had a frightful attack of fever seven months ago, the cause of which could not be ascertained, though we had the best medical opinion possible, *and towards the close of the fever one of the ears discharged.*"

From all that has preceded it will be evident that a fair acquaintance with ear-diseases is absolutely essential for all educated physicians.

A proper understanding of the way in which disease force affects the aural circulation and disposes the ear, as an organ of hearing,

[a] Op. cit. Pp. 224, 225.

[b] This last by no means follows. I have not examined a sufficient number of cases, but am inclined to think from actual observation, that idiocy with aural enfeeblement is attended with these bruits, even when congenital.

to inertia and disuse, explains and illustrates so many of the phases of the chronic, aye, and of the acute diseases of other parts of the body—and, besides, the majority of its ailments are of a nature so uniform, and therefore susceptible of such simple illustration—that the conclusion is irresistible in favour of constituting these diseases the subject for the commencement and not the termination of a medical educational career. In other words, the study of chronic deafness should undoubtedly be made the Alpha, not the Omega, of medical knowledge.

The intricate anatomy of the organ, obviously, cannot be put forward as an argument to the contrary. When we undertake the instruction of students, it is our imperative duty to qualify them for the practical everyday duties of their profession, and not merely to furnish them with instruction that will constitute them naturalists. How absurd it is to expect a student to answer questions in regard to rare and uncommon forms of disease, the perforating pedal, the warty ulcer, and the like, not to mention advanced facts in the science of embryology and histology—at a time when he is utterly ignorant of the proper treatment to be pursued for the arrest and dispersion of a simple affection having a diminution in hearing power for its predominating feature!

We now come to discuss the pathological meaning of that intractable symptom, tinnitus aurium. This we cannot do without referring to the recent researches of that able and independent physiologist, physician, and aurist, Dr. Edward Woakes. But, however unbecoming it may seem to one who undoubtedly must be considered the pioneer of rational aural morbid physiology, I prefer to consider the matter from my own independent standpoint, and then to show in how far I consider myself in agreement with him, and to what extent we differ.

The symptom, tinnitus, is, it is but too well known, one that has baffled the physician and bewildered the patient to a degree greater than any form of suffering to which the disease of any single organ subjects the human body. Such authorities as Sir William Wilde, of former days, and Dr. St. John Roosa, of living fame, despair of ever furnishing an adequate pathological interpretation of its presence.

Probably no one, however healthy, can be said to be absolutely free from the recurrence of slight noises in the ears at times when the system is subjected to unusual strain, whether mental or physical; these are not noticed, or if noticed are soon forgotten.

In diseased states, however, the case is very different; for here such noises assume a character so varied as to resemble the notes of almost every sound-producing instrument, especially are they likened to the sounds of the sea (tidal noises), the steam-engine, the whistling of the wind, and the rumbling and vibratory sound given off by machinery. It would answer no good purpose to describe all these; such noises are usually classifiable under the denomination of *musical tinnitus;* these are more or less continuous.

That other most pronounced form of the affection, uniformly described by patients as pulsative—in the homely vernacular of some sufferers, "a pulse in the ear"—resembles in every way arterial pulsation; this is the *pulsative tinnitus*, and being synchronous with the heart, is invariably intermittent.

But there is, besides these, a large class of noises complained of, a distinctive appellation for which will be better taken from their presumed pathological mode of causation, rather than from the character of the sounds thereby produced, and these are the obstructive noises (tinnitus). Some of these are happily easily remediable; such, for example, as that arising from the sudden dispersion of air that has been pent up in the cavity of the middle ear, or the channel of the Eustachian tube, owing to the removal of a clot of mucus, or that caused by cerumen pressing in the membrana tympani; while others, alas! indicative as they are of Menière's disease or embolism of the vessels, are often irremediable. Suddenness of access, some reservation being allowed, will characterise this large class more than any other feature. And, then, supposing ocular examination of the auditory canal and nasal and post-nasal regions not to have furnished explanation of its occurrence, account will have to be taken of the character of the tinnitus, whether paroxysmal or continuous, and its association with vomiting, head-ache, and the vertigo peculiar to labyrinthine disturbance. A little patience on the part of an intelligent physician will enable him to estimate very fairly the gravity of a given case.

There is yet another form of tinnitus, which is supposed to be due to deranged muscular action. I am not prepared to deny that an abnormal condition of the tensor-tympani, and other muscles of the ear, may explain some of the lesser continuous humming and ringing noises; but that muscular action is largely operative in the production of the more distressing forms of tinnitus complained of in disease, I am certainly inclined to doubt.

The *bruit musculaire*, emitted while a muscle is in a state of

contraction, is a low ringing sound (Draper); and never, that I am aware of, assumes any great intensity in other parts of the body; why, therefore, should it in the ear? That the contraction of the intrinsic muscles of the ear, particularly the tensor-tympani, may occasion pressure-effects upon the circulation of the middle and internal ear, and so induce tinnitus to any great extent, is, to say the least, doubtful; even if it did, the sound would not, properly speaking, be a muscle-sound.

Of course the consideration of the way in which the various noises in the ears are brought about, affords matter for absolutely unlimited speculation. If, however, we limit ourselves to the simple teachings of parts of the body, distant from the ear, and draw inferences from these in regard to aural derangement, we can, it seems to me, obtain, by thus restricting inquiry, a fairly clear comprehension of the nature of the disturbances present when tinnitus aurium is a prevailing symptom.

Thus limiting inquiry, we find the portions of the human body disposed to abnormal bruits are those which are hollowed out for the rapid passage through them of air or fluid, the respiratory and abdominal cavities, as well as the circulatory system.

The ear, however, is constructed so as to restrict movement as much as possible; we have nothing analogous, therefore, in the ear cavities to respiratory bruits, save such as will be comprehended under our term obstructive noises; but we have bruits resembling in every way those given off by the circulatory organs, as can be proved by a physical examination of the blood-vessels themselves.

Patients that consult us for tinnitus are found to refer their sensations not alone to the ear, but as well "to the head;" cerebral tinnitus, as observed long since by Sir William Wilde, must be considered an established affection, apart from and independent of that referable to the ear. This we may reasonably suppose to be due to a limitation of the irritative process to the cerebral circulation.[a]

[a] Venous murmurs proceeding from the cerebral circulation have often been observed. "They may be heard over the course of the superior longitudinal sinus, and at the maximum intensity over the *Torcular Herophili*" (Walsh, quoted by Aitken). Dr. Fowler (*op. cit.*, p. 29), in support of Chauveau's theory, that abnormal bruits in certain veins are due to the anatomical connexions of these veins preventing them accommodating themselves to the reduced diameter of their respective blood-currents, goes on to say: —"There is an interesting confirmation of the truth of this theory in the fact that a similar bruit to that audible in the innominate veins may occasionally be heard over the cerebral sinuses at the Torcular Herophili, where the same conditions as to non-contractility are present; and also in the fact which I have observed, that

If, then, irritation can so limit itself, obviously, cervical bruits need not necessarily accompany all cases of tinnitus aurium; and, on the other hand, these latter need not be attended with aural enfeeblement. The wonder is that cervical bruits are heard in such a large proportion of cases.

My explanation of the causation of aural tinnitus the intelligent reader has, I dare say, already anticipated—it is, that the pulsative tinnitus is due to imperfection of the aural arterial circulation; and, therefore, most complained of by patients under circumstances that excite the general arterial circulation, as moving quickly, suddenly turning round, &c.; the musical I would refer to a like condition of the coats of the veins; this variety would therefore be for the most part aggravated upon the patient lying down, when in a warm, unhealthy atmosphere, after, and not during active exertion; and I can point to what no writer, as far as I can gather, has yet done, a tangible and sufficient basis upon which to rest my theory—the co-existence of abnormal murmurs in the cervical blood-vessels.

The *venous murmurs*, or *hums*, are *continuous humming*, *buzzing*, occasionally *musical*, *singing murmurs*; these are their well-known characters, as described by Dr. Aitken; and thus in every way they correspond with and resemble the noises complained of by those suffering from the musical form of tinnitus aurium; why, then, resort to other hypothetical, albeit learned, explanations of their mode of causation?

Moreover, often and often have I anticipated, with apparently great accuracy, a patient's description of his symptoms, by resorting to the application of a stethoscope to the cervical blood-vessels; though, as stated, the condition of these is not necessarily an invariable or exact index of the aural circulation.

Had former writers upon aural diseases taken the trouble to adopt this simple and rational expedient, they would, I make bold to affirm, have been less ready to question the accuracy and exactitude of patients' descriptions of their sufferings.

Abuse of the plaintiff's attorney implies, in legal circles, a want of success on the part of the defendant's advocate; how much more does an absence of interest in, and a denial of a patient's accuracy of description, imply in medicine, an unsuccessful and incompetent

in anæmic subjects who suffer from deafness, not dependent upon disease of the auditory nerve, and in whom the conduction of the skull-vibrations is normal, a similar sound becomes audible on the affected side. This is, no doubt, the bruit produced in the lateral sinus conveyed to the ear through the medium of the temporal bone."

adviser. Patients are right when they require their physicians to manifest a sympathetic and intelligent interest in their symptoms.

An imaginative or wilfully mendacious description of symptoms implies that the patient is labouring under cerebral not aural infirmity—a matter that is only determinable by the intuitive faculties of the diagnostician himself.

We cannot pass on without fulfilling a promise to undertake a comparison of our theory of the causation of the symptom, tinnitus aurium, with that of Dr. Woakes. In the main, our investigations, as establishing the supreme importance of sympathetic disturbance in explaining the phenomena of aural disease, substantiate the theoretical position taken up by him. This is all the more satisfactory to myself, as the present investigation is merely an extension of one begun many years ago, into what I then termed "painless irritability of fibre;" and which then, as now, I referred to involvment of the vascular parietes—it is, in fact, simply and solely the outcome of clinical inquiry.

Dr. Woakes has taken the matter up from his unquestionably strong position as an interpreter of the physiological action of the sympathetic ganglia, and he has comprehended the varying forms of tinnitus in a systematic classification as follows :—

Local morbid condition.	Character of sounds.
1. Labyrinthine congestion; arterial - - - -	Pulsating.
Do. venous - - - -	Rushing noises.
2. Anæmia, aneurysm; extra-mural - - - -	Pulsating.
3. Fluid in Tympanum or Eustachian tubes; catarrh of middle ear - - - - - - - -	Bubbling or gurgling noises.
4. Congestion of membrana tympani, cavity of tympanum, or of Eustachian tube, or of all these together; chronic non-suppurative inflammation of the ear -	Tidal noises.
5. Undue contraction of intrinsic muscles; reflex irritation of tensor-tympani nerve from otic ganglion	Singing and tidal, similar noises.

We agree with him, it will be seen from this, in referring pulsative tinnitus to arterial involvement; and the musical, but to a very much larger extent than he does, to the venous circulation. That this involvement is due to disturbance of the vaso-motor distribution of the sympathetic, there is every possible evidence for supposing; that the resulting disturbance is one of "dilatation of calibre" of the aural blood-vessels, and that when noises are present these vessels "may contain ten to twenty times as much blood as ordinarily flows through them," and that the pulsative noises "may be due to fulness of the venous as well as the arterial

system," involves an explanation of this symptom that I certainly cannot follow.

I content myself with supposing that a bruit can exist in aural as well as cervical blood-vessels without there being evidence of any accompanying vascular distension.

That the area over which the vaso-motor relations of the blood-vessels supplying the labyrinth is correlated by way of the vertebral artery's walls with the inferior cervical ganglion of the sympathetic, is an anatomical fact that Dr. Woakes has done well to insist upon. That these parts being correlated, there must, of necessity, be an over-distended condition of the aural circulation when tinnitus prevails, has not, I consider, been by any means proved; and Dr. Woakes himself, in explanation of the undoubted beneficial effect of inhalations of amyl nitrite in the treatment of tinnitus, has to resort to the supposition of there having been anæmia present.[a]

Brown-Séquard's experiments, as well as those of Claude Bérnard, repeated as they have been by many other physiologists, in which it is shown that section of the superior cervical ganglion of the sympathetic is followed by hyperæmia of the auricle, and a tendency to lacrymation of the corresponding eye, together with an elevation of temperature, may appear to lend powerful support to Dr. Woakes' opinion, and it would do so had we anything like to the condition produced by a section of this or the inferior cervical ganglion present in chronic aural disease.

Dr. Woakes certainly appears to strengthen his position by reference to Morat and Dastre's experiments, which show that excitation of the cephalic end of the cut nerve by the induced current led to the result that the initial constriction of the blood-vessels, due to the excitation, is followed by a long lasting dilatation, greater than that which is induced by section alone of the sympathetic.[b]

It is, however, from the position of a clinical inquiry we wish to pursue the subject; and we can point to the fact that where undoubted venous stasis, in connexion with aural disease, is present, indicated as it is acknowledged to be, by the occurrence on an external temporo-parietal œdema, subjective noises are by no means a prominent feature.

In the case before referred to, reported by Dr. Thomas R. Pooley,

[a] Op. cit., p. 118.

[b] Introductory Chapter, Post Nasal Catarrh. Pp. 8. By Dr. Woakes. London: H. K. Lewis. 1884.

of New York, where thrombosis of the left lateral, inferior petrosal, and the cavernous sinuses was found after death, and where absolute deafness to all sound was present for some weeks beforehand, no mention whatever is made of there having been noises present; which would hardly be the case, seeing that Dr. Pooley himself is an eminent aurist, had tinnitus constituted a prominent symptom. There is, therefore, every reason for saying that the calibre of the veins, at all events, is not increased, and that these do not contain ten or twenty times as much blood as ordinarily flows through them when tinnitus is present; and, besides, where noises are most complained of, at all events in connexion with *chronic* aural disease, the only parts of the ear open to actual inspection—namely, the tympanal membranes, are more usually *anæmic* than otherwise. So much for the veins; then as regards the arteries of the ear, I do not know of any pathological aural condition in which ten or twenty times as much blood is contained in the aural arteries as ordinarily flows through them.

The consideration we gave in our opening sentences to the anatomy of the ear, shows that there are serious mechanical objections against such an assertion—an assertion that, as Dr. Woakes acknowledges, is necessary for the maintenance of his theory.

The arteries wend their way to the innermost parts of the ear, through bony canals, that cannot allow of a distension so great as this supposition of Dr. Woakes' would imply.

If we look in disease for any form of aural arterial distension, we shall find it difficult of discovery—difficult certainly apart from the *rubor et tumor cum calore et dolore* of old writers—in other words, apart from acute inflammation, and which, of course, would not explain chronic aural tinnitus. In this respect, therefore, I am convinced Dr. Woakes' theory of the causation of chronic aural tinnitus falls completely to the ground.

(To be concluded.)

BILIARY CALCULI.

HUCHARD uses the following combination in the treatment of gall-stones:—℞. Res. podophylli, ext. hyoscyami, saponis, āā gr. 5. Make ten pills, of which one or two may be taken daily. The addition of a small amount of rhubarb, or, if constipation require it, of aloes, makes the above a useful formula for a cholagogue cathartic.—*Revue de Thér. Méd. Chir.*, and *Phil. Med. Times.*

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Text-book of Pharmacology, Therapeutics, and Materia Medica. By T. Lauder Brunton, M.D., F.R.S., F.R.C.P.; Assistant Physician and Lecturer on Materia Medica at St. Bartholomew's Hospital, London; Examiner in Materia Medica in the University of London, in the Victoria University, and in the Royal College of Physicians; late Examiner in Materia Medica in the University of Edinburgh. Adapted to the United States Pharmacopœia by F. Williams, M.D., Boston, U.S.A. London: Macmillan & Co. 1885. Pp. 1139.

This work will be welcomed by all interested in the development and progress of rational and scientific therapeutics. Its publication is opportune, and denotes the establishment of a new epoch in the literature of British works upon materia medica, in which empiricism is being rapidly replaced by science, and mystified ideas by well-defined facts. Within the last few years our knowledge of the modes of action of drugs has been added to by many excellent workers in Great Britain. Amongst these, the name of Dr. T. Lauder Brunton occupies a prominent position, from the ability and industry with which he has brought his general, and especially his physiological, knowledge to bear upon his therapeutical researches, and from the brilliant results he has obtained. For these reasons, as well as for others of a more purely literary and personal character that are well-known, no one, perhaps, was more fitted than he is to give the profession in this country an authoritative treatise on the results and teachings of the experimental methods by which our existing knowledge of the action of drugs has been ascertained; of the manner in which each function of the body can be modified by drugs; and of the general *rationale* of the use of drugs in disease. It almost goes without saying that the author has performed this, the most important, portion of his work in a consummate manner. Indeed Section I., on "General Pharmacology and Therapeutics," under which title the above heads are considered,

is the feature of the book. It comprises some 400 pages—about one-third of the volume—and is as excellent in its conception and arrangement as it is copious in detail. Starting with a chapter upon the several relations between the organism and substances affecting it, Dr. Brunton discusses, in Chapter II., the circumstances which affect the action of drugs on the organism—for example, temperature and idiosyncrasy; and argues cogently in favour of the use of, and against the objections to, experiments upon animals. He shows that by means of such experiments we are able to ascertain the action of drugs upon those organs of the body which are alike in man and animals; and that the very differences which exist between various sorts of animals help us to understand the action of drugs more thoroughly. A very necessary caution is here given against a common fault in the works of experimental pharmacologists—viz., that of drawing general conclusions from too limited data, and of this some instructive examples are given. From this on he traces, in successive chapters, and, as it were, in an ascending scale, the action of drugs on protoplasm, blood, and low organisms, such as bacteria; then on the invertebrata, then on muscle, on nerves, on the spinal cord, and so on upon the different systems and functions of the body. The four last chapters of this section contain a very full description of the various methods of administering drugs; tables of poisons and their antidotes; a table showing the antagonism of drugs, and a few remarks on the subject of dosage, with a new posological rule proposed by Dr. Brunton himself, arranged for the metric system.

Section II., "General Pharmacy," is little more than a classified list of the preparations of the British and United States pharmacopœia, which are disposed of in some thirty pages. Dr. Francis H. Williams, of Boston, Mass., is responsible for the adaptation of the work to the latter pharmacopœia; and our author expresses the hope, with which there will be a general accord, that by thus tending to familiarise medical men on each side of the Atlantic with the preparations employed in both countries, the introduction of an international pharmacopœia may be facilitated.

The four remaining sections are occupied with materia medica proper, the natural history form of classification being followed; and the work concludes with three very complete indices—a general, a biographical, and, what seems now to be a necessary part of all works on therapeutics, an index of diseases and remedies, which

together occupy no less than 130 pages of small type in double column.

In thus laying before our readers a general plan of the arrangement and scope of this work, we have left ourselves but little space to speak as to the value of its contents. In its perusal one is struck with the manner in which the intimate relationship between physiology and therapeutics, and of pathology with both, is constantly brought forward. Treated in this way, therapeutics is elevated from being a study of limited interest, and consequently one too generally shunned by the ordinary student, to a subject of pursuit affording the widest field of original research to the most cultivated and scientific investigator, and yielding the greatest advantage to the judicious practitioner. A reason, too, is given for the employment of certain drugs in certain diseases; and thus the adoption of a more rational and therefore more satisfactory treatment is encouraged. This is also impressed upon the reader in many places by indicating the therapeutic bearings of results obtained by experimental methods. The technical details of these methods are clearly explained in the text, and are illustrated by wood engravings and diagrams. Several of these diagrams are well adapted for teaching-purposes, and a few have already appeared in connexion with some special articles, now incorporated in this work, that were originally published by the author in *The Practitioner*. The few woodcuts of articles of the vegetable materia medica in Section V. are poor and unworthy of the volume. The only possible excuse for their admission into it is that they did service for the author previously in his *Tables of Materia Medica*. We must not omit mention of the section of the organic materia medica, which comprises the carbon compounds of the fatty and of the aromatic series. Although a comparatively small section, of sixty pages, it contains, as the author indicates, some of the most important remedies we possess; and these compounds, he thinks, by-and-by, will probably replace, to a great extent, and perhaps entirely, the vegetable materia medica. All the most recently introduced articles belonging to this group are described, and especially the new antipyretic and antiseptic agents constituting some of the lower members of the aromatic series.

Altogether, there is no more complete and valuable work of its kind extant; and we heartily congratulate Dr. Lauder Brunton on the satisfactory result of the work upon which he has bestowed so many years of labour.

An Address on "Cholera Inquiry." By the HON. SURGEON-GENERAL CORNISH, F.R.C.S., C.I.E.; President South India Branch, British Medical Association. Madras. 1885. Pp. 14.

THIS Address is eminently worthy of notice, if only for the reason that it is the final Indian utterance of an officer whom we do not hesitate to pronounce the highest authority on Indian sanitary questions. We expect to hear Surgeon-General Cornish's views on cholera more fully stated hereafter, now that he has retired from the control of the Madras Medical Department, after 30 years of almost uninterrupted service. Meantime we desire to call attention to two or three important points of this Address.

Mr. Cornish "reserves judgment" on the controversy between Kochites and Kleinites; but we suspect that the scale is inclined to turn against the former. He considers it a "public misfortune that investigators charged with so important a mission should lay themselves open to the imputation of forming hasty conclusions, and of drawing deductions from their experiments, unwarranted by the evidence at their command. This, it seems to me, has been the case with Dr. Koch and his colleagues." On the other hand, "it is quite certain that the work of Messrs. Klein and Gibbes was too hurried and incomplete to ensure a settlement of the question whether cholera is the result of the inception into the human body of a living germ."

It being almost universally believed that cholera is not communicable to any of the lower animals, experiments on these with dejecta or bacilli are nugatory. What is the alternative? "Undismayed by humanitarian howls," Mr. Cornish boldly suggests experiments on condemned criminals. Between three and four hundred criminals are executed annually in British India. "Could it not be so arranged that a small portion of the annual victims of the hangman might be spared the final execution of the judicial sentence on something like these conditions—viz.: 1st, that they should declare their willingness (after due warning of the danger likely to be incurred) to subject themselves to scientific experimentation, in reference to the artificial production of cholera; and, 2nd, that, surviving such experimentation, their lives should be spared, either in confinement or otherwise, as the State was pleased to direct?" There would certainly be no lack of candidates on these terms, even in Europe.

It is well known that Dr. J. M. Cuningham, late Surgeon-

General with the Government of India (with whom is often confused Dr. Cunningham, who has, in conjunction with Dr. Lewis, been employed in Northern India for many years "in scientific research as to the nature of cholera," without much apparent result), has recently published, "Cholera: What can the State do to Prevent it?" In this work he denies the communicability of cholera from man to man, and attributes the disease to some unknown "condition" or "force." We are rejoiced to have from an authority in no wise inferior to Dr. Cuningham in ability, in industry, or in experience, a clearly-expressed dissent from views which have obtained converts in unexpected quarters. "Those," says Mr. Cornish, "whose experience of cholera is experience of the epidemic variety, will certainly hesitate before they accept an unknown 'force' or an 'atmospheric condition' as adequate causes of phenomena coming under their notice." And again: "In this my last utterance, in India, on the subject of cholera, I take the opportunity of stating that my own experience does not support the revived theories of mysterious 'forces' and 'aerial' influences."

The Science and Art of Surgery. By JOHN ERIC ERICHSEN, F.R.S.; Surgeon-Extraordinary to Her Majesty the Queen. Eighth Edition. Revised and Edited by MARCUS BECK, F.R.C.S. London: Longmans, Green & Co. 1885.

FOR many years this important treatise on Surgery has been a trusted book of reference for the surgeons of these countries. Of late it has encountered powerful competitors, but it has not lost the position which it took on its first appearance, and it is yet regarded as at once most reliable and most readable. Thirty years have passed since the first edition, and we are now presented with the eighth, remodelled and revised by a competent editor. The type is larger than before, the paper better, the illustrations more numerous and elaborate; and the pathology has been specially revised by Mr. Beck, so as to bring it up to the latest date. This work has been so often reviewed in this journal, that it is unnecessary to go into a detailed examination of its contents. Of the newer operations, a good account is given of the more recent methods of dealing with herniæ for radical cure. The author speaks with a tone of caution as to the indiscriminate adoption of any of them, and advises that none should be performed where the hernia can be easily controlled by a truss. But while caution is

undoubtedly wise, it may be observed that the risks which are run by persons suffering from hernia are, under all circumstances, very grave and real; and the question to be decided is, whether the risks of an operation for radical cure are greater. We think they are not to be compared. A patient who is operated upon under all favourable conditions of health, with deliberation, does not, under antiseptic precautions, run any great chance of dying, and he is, in the majority of instances, permanently relieved from an otherwise ever-present danger of strangulation of the gut.

In this connexion may be noticed the subject of acute intestinal obstruction—one of the most difficult with which the surgeon may be brought face to face. The difficulty lies at the outset in determining whether the condition is due to simple paralysis of the bowel, impaction of fæces, intussusception, or twist.

In ordinary acute obstruction, Mr. Erichsen thinks that the only plan that appears to be of any value is the continued administration of opium, accompanied by hot fomentations to the abdomen. If the case be clearly made out, we have no objection to this advice; but there is great danger that in obscure cases we may be landed in a fool's paradise. This is particularly the case, if after all the patient should prove to be the subject of intussusception or volvulus. We have seen some cases in which this unfortunately turned out, and in which the patient might have been saved by a timely exploration. In intussusception the danger lies in delay. It is quite true that some cases do recover by sloughing away of the invaginated gut. The records show something like 15 per cent. of natural cures. But, on the other hand, modern experience shows that much greater liberty may be taken with the abdominal cavity than formerly, and that the peritoneum, with certain precautions, is a very tolerant membrane. Certainly, we should say that if the surgeon is satisfied that the condition present is one that could be relieved by laparotomy, that ought to be done. The operation is not of great danger, and is certainly vastly less than the abandoning of the patient to the soothing effects of opium and the chances of nature.

There is a fair account of operations on the kidney.

We notice, with pleasure, that Mr. Erichsen throughout teaches the importance of attention to the antiseptic treatment of wounds, and a very succinct account is given of the various modifications which have been introduced. We think the statistics which he gives of the results of amputations need considerable modification under the altered methods of the present time. We notice, for

instance, that "the general percentage of mortality after amputation (of the thigh) for disease is about 32·5 per cent." We hope this is not now true of thigh amputations anywhere in these kingdoms. The statement is certainly not in accordance with our experience.

No book is above criticism; but the popularity of these volumes for so long a period proves that with the profession they hold a justly high place in our literature. Some slight faults there are, but we can say that the present issue is better in all respects than any of its predecessors; that it represents admirably the present development of surgical science; and that it will not, we are sure, fail to hold the high position to which it has been raised by the general voice.

Why Not Eat Insects? By VINCENT M. HOLT. London: Field and Tuer. 1885. Pp. 99.

THE integument of this little *brochure* is repellent, in spite of its celestial hue; being, as it were, tattooed with images of creeping things. The contents will be to many readers repulsive, even disgusting. The author writes in soberest earnest; and would convince, if matters of taste and prejudice were matters of argument. There is no *reason* why slugs and snails should be inferior as food to periwinkles or cockles, or even oysters; and, in fact, we believe they are not; but we shall not eat them for all that. A people whose poorest artisans—nay, whose paupers—will not tolerate Australian tinned meat, and whose middle classes hesitate to save 20 per cent. by buying American beef and New Zealand mutton, and make merry over "hippophagy" and "onophagy," will not take to entomological food, in spite of precedent and argument and experiments made by enthusiastic entomophagi. We are assured that "most of the commoner moths which flit in thousands by night around our fields and gardens, have nice fat carcases, and ought certainly to be used as food. Why, they are the very incarnescence of sweetness, beauty, and deliciousness—living storehouses of nectar gathered from the most fragrant flowers." And yet we decline to taste.

It will be inferred that our author uses the word "insect" with considerable laxity, so as to include molluscs, articulata, &c. He suggests two *menus* for converts to insectivoracity, one of which we subjoin, as illustrative of the lengths to which he is prepared to

go; but he admits that these *menus* "are unnaturally crowded with insect items; . . . they are merely intended to show how such dishes may be usefully introduced into the chief courses of an ordinary dinner:"—

"Snail Soup.
Fried Soles with Woodlouse Sauce.
Curried Cockchafers.
Fricassee of Chicken with Chrysalids.
Boiled Neck of Mutton with Wire-worm Sauce.
Ducklings with Green Peas.
Cauliflowers garnished with Caterpillars.
Moths on Toast."

One Hundred Years of Publishing, 1785–1885. Philadelphia: Lea Brothers & Co. 1885. Pp. 20.

WITH justifiable pride the great publishing firm of Messrs. Lea, Brothers, & Co., of Philadelphia, have issued this sketch of the history of their house from its foundation in 1785. To us these pages are interesting on two accounts. For some years the firm has withdrawn from miscellaneous publication and concentrated its energies on the issue of medical works—periodicals, translations, and original productions. It has published the *American Journal of the Medical Sciences*, the oldest medical periodical but one, in the English language, from its commencement; and the works of Dewees, Meigs, and other eminent Americans of our profession, have issued from its press. The other claim upon our interest arises from the fact that the founder of the firm was an Irishman. Mathew Carey, born in Dublin in 1759, was a printer and bookseller. In 1779 he got into trouble by publishing "A Letter to the Catholics of Ireland," and had to fly to Paris, where he remained for a year, forming acquaintance with Franklin and La Fayette. In 1783 he began to issue the *Volunteer's Journal*, which, in April, 1784, led to his arrest and incarceration in Newgate, on the sole authority of Parliament. Ultimately the climate of Ireland became, politically, too hot for him, and he escaped to Philadelphia and started a newspaper. His first original production had been an essay against duelling, published in 1777; and he illustrated his view in 1786, by fighting a rival editor, one Colonel Oswald, who judiciously lodged a bullet in his femur, and kept him quiet for sixteen months. This and all other difficulties he overcame by

patience, energy, and perseverance; and in 1817 he was the head of the leading publishing firm of the United States, from which he retired in 1824. The patriotic author of "Vindiciæ Hibernicæ," "in which he sought to justify his native land from the partisan stories accepted in the current English histories," still, we are happy to say, lives, respected and beloved.

Transactions of the College of Physicians of Philadelphia. Third Series. Vol. VII. Philadelphia: Printed for the College, P. Blakiston, Son, & Co. 1884. Pp. 466.

A LARGE portion of this volume is occupied by four Memoirs of Deceased Fellows of the Philadelphia College of Physicians and by the President's Annual Address of 2nd January, 1884. Of the subjects of the former, only two, Meigs and Gross, attain to European celebrity. In speaking of Dr. Gross' "System of Surgery," of which the sixth edition appeared in October, 1822, Dr. Hays remarks :—"The review of this work which gratified him most was given of the fifth edition in the *Dublin Journal of Medical Science* for 1874. It covered nearly fifty pages of that periodical, and was at once able, analytical, and critical." We regret that the life of the reviewer has not been spared, so that he might share our pleasure in the compliment.

There are sixteen papers in the volume. In one of them, twenty pages are devoted to arguing that "hydrophobia is not a specific inoculable disease, derived from the bite of a similarly affected animal;" that cases of so-called hydrophobia are either "pure psychoses" or erroneously diagnosticated. This view does not seem to have been favourably received by the meeting. Dr. R. Meade Smith, Professor of Comparative Physiology in the University of Pennsylvania, contributes a paper "On the Time required by the Blood for making one Complete Circuit of the Body." Hering's method, it will be remembered, of determining this point was to inject into one jugular, towards the heart, a solution of some salt, whose presence in the blood, coming from the head by the other jugular, could be readily detected by chemical tests. The salt had clearly, when detected, made a complete revolution; but it could not legitimately be concluded that the time between injection and detection represented the period of a complete circulatory revolution, because the effect of diffusion was ignored. Poissenille demonstrated practically, repeating Hering's experiments with potassium-

ferrocyanide on the nose, that the addition of a trifling amount of alcohol to the solution extended the circulatory period from 28 to 45 seconds. He found, moreover, that potassium-nitrate or ammonium-acetate made the circuit in 18 or 20 seconds. It is evident, therefore, that the effect of diffusion cannot be neglected in researches by this method, and that a substance should be used for injection which is not only small enough to pass through the capillaries and easily recognisable, but also incapable of diffusion. Such a substance Dr. Smith claims to have found in *pigeon's blood.* For replies to obvious objections, and for a description of the method of experiment, we must refer to the paper itself (p. 137). Two experiments were made on dogs. In the first (weighing 18 kilos) the pigeon's corpuscle appeared after 20 seconds and 55 pulsations. When the effect of the injection had passed off, potassium-ferrocyanide was introduced and detected in 15 seconds (16 pulsations). In the second case, the dog weighed 10 kilos, the pigeon's blood appeared in 17 seconds (53 pulsations, and the potassium salt in 9·5 seconds (14 pulsations). These seem to show that the salt and the blood do not move through the system with the same velocity. In six experiments subsequently made on dogs, whose average weight was 9·5 kilos, the mean time of circulation determined by Dr. Smith's method was 17·5 seconds; and in four experiments on rabbits (averaging 2·3 kilos in weight), 11 seconds. Comparing these results with experiments of Vierordt's, made after Hering's method, Dr. Smith concludes that "in the dog nearly 15 per cent. of the time stated by Vierordt as expressing the mean-time, and in the rabbit over 59 per cent. are due to effusion."

A short paper by Dr. Leffmann (p. 157) contains some amusing instances of ignorance of elementary chemistry in prescribers. An apothecary complained to the author that he was expected to make a clear mixture of syrup of hypophosphites, tincture of ferric-chloride and dilute phosphoric acid. "Colorless tinctures of iodine" are sold extensively in the United States; preparations which do not stain the cuticle, the iodine being combined with an alkali and inert. Potassium permanganate is made into pills, with excipients which decompose it at once, converting it into the dioxide. Even when the drug is made up with "some mineral excipient, probably kaolin," thus escaping immediate decomposition, Dr. Leffman found that in a mixture of hydrochloric acid and pepsin the conversion to the insoluble oxide began at once. He laughs at the fears of "the learned English therapeutists," who gravely discuss

the probability of the induction of abortion by the insoluble products of the decomposed eighth of a grain of potassium permanganate.

In a valuable paper by Drs. Randolph and Roussel "On the Nutritive Value of Branny Foods," the following conclusions, which are at variance with some of the generally accepted views on the subject, are arrived at:—That the carbohydrates of bran are but little digested by man; that the nutritive salts of the grain exist chiefly in the bran, and that, therefore, when bread alone constitutes the food, it should include a considerable proportion of the bran, but when bread is merely an adjunct to other foods which contain the inorganic nutritive elements, a white bread offers, weight for weight, more available food than does one containing bran; that most of the gluten of wheat is in the central four-fifths of the grain, and the gluten cells of the fourth layer of the bran "are little, if at all, affected by passage through the digestive tract of the healthy adult;" that, in an ordinary diet, bran in the flour unduly quickens peristalic action, preventing complete digestion and absorption; and that a process which should remove only three cortical layers, leaving the fourth with its gluten, would yield a cheaper and more nutritious flour than the present product of the mill (p. 212).

There is an elaborate paper by Dr. Leeds "On the Composition and Methods of Analysis of Human Milk." He describes in detail the more modern methods—Vernois and Becquerel's, Haidlen's (as modified by Christenn), Meigs', Gerber-Ritthausens', the last of which he has himself adopted, and by it analysed eighty samples. His results are as follows:—

	Average	Minimum	Maximum
Specific gravity	1·0313	1·0260	1·0353
Albuminoids	1·995	0·85	4·86
Sugar	6·936	5·40	7·92
Fat	4·131	2·11	6·89
Solids not fat	9·137	6·57	12·09
Ash	0·201	0·13	0·37
Total solids (by addition)	13·268	10·92	16·79
Total solids (by evaporation)	13·267	10·91	16·66
Difference	0·001	0·00	0·21
Water	86·732	89·08	83·21

As results of his investigations he lays down that albuminoids (the average of which is two per cent.) are the most variable

constituent of woman's milk, sugar least, and fat intermediate in variability; that albuminoids are most abundant in the early period of lactation, diminishing progressively; that sugar is much below the average immediately after parturition, above and nearly constant afterwards; that the reverse is true of the fat, and that the salts are nearly constant throughout; that "over-robust" women yielded milk *less* rich in albuminoids than that of obviously anæmic subjects, and that, generally speaking, "the best milk was obtained from lean women in good physical condition."

The concluding paper, by Drs. Musser and Keen, treats of Cholecystotomy, reporting two new cases, of which one terminated fatally, and giving a table of all previous cases, with remarks. Of the thirty-five cases here tabulated ten only were fatal, a mortality of less than three per cent. A "Note" appended to the paper gives particulars of Mr. Tait's thirteen cases, seven of which are included in the other table. In these there was but one death, due to cancer, the patient having recovered from the effects of the operation.

We observe that there is a class of "Associate Fellows" of the College of Physicians of Philadelphia, "limited to fifty, of whom twenty may be foreigners." There are sixteen foreigners on the list. England has ten representatives, France two, Ireland, Scotland, Italy, and Spain, one each—an eccentric distribution of medical honours, as it seems to us. Mr. Butcher, elected in 1865, represents our Irish school.

The International Encyclopædia of Surgery. Edited by JOHN ASHHURST, Jun., M.D.; Professor of Clinical Surgery in the University of Pennsylvania. In Six Volumes. Vol. V. London: Macmillan & Co. 1885.

THIS volume of the Encyclopædia is of very great interest. Some of the subjects treated are among the most important in surgery, and the editor has succeeded in placing the treatment of them in very able hands. Professor Nancrede writes upon injuries of the head; Mr. Treves on malformations and diseases of the head; Professor Williams on injuries and diseases of the eyes and their appendages; Dr. Buch on injuries and diseases of the ear. Professor Post contributes the chapters on injuries and diseases of the face, cheek, and lips. In some senses this essay is disappointing. It certainly treats some points in a very cursory way. If one wants

information, for instance, on the subject of salivary fistula he will not find much enlightenment here. The whole matter is disposed of in half a page, and the operations are merely mentioned. It is just to a work of this sort that the surgeon would refer for guidance upon points of rare surgery, but in this particular case he will get none. Cheiloplastic operations, on the other hand, are very well described, but the illustrations, which are numerous enough, are very bad, and appear to have done service in some other book. The highly-coloured lithograph of a man with epithelioma of the face is surely quite unnecessary. It shows nothing but a bloody chasm.

Mr. Christopher Heath, of London, disposes of the injuries and diseases of the mouth, fauces, tongue, palate, and jaws in less than sixty pages. We certainly admire condensation, but here again we think the subjects have been sacrificed to the exigencies of space. There are only three or four illustrations for all the subjects dealt with—a meagreness which cripples still further the usefulness of the article.

As might be expected, Professor Solis-Cohen does his essay on injuries and diseases of the air passages with great care and considerable fulness. He occupies about 100 pages more than Mr. Heath—not by any means with useless padding, but with valuable writing. The illustrations here are excellent. Professor Bennett, of Dublin, contributes a chapter on injuries of the chest. We are glad to be able to say that this bears the marks of all the care and erudition which characterise the writer's work in surgery.

There is a very admirable account of injuries and diseases of the abdomen by Mr. Henry Morris, of London. The various subjects which come under this heading are very fully dealt with, and the teaching as to treatment is marked by definiteness and clearness. In diffuse peritoneal suppuration the author rightly recommends abdominal incision, and the use of the drainage-tube. The advance in abdominal surgery has had the effect of bringing this very disastrous affection within the range of the operator, and with much success. In dealing with wounds of the intestine Mr. Morris gives a *résumé* of the different plans of suturing the gut—the best indeed we know of. Its usefulness, however, is damaged by the absence of diagrams, which are very necessary for purposes of elucidation. The operations on the kidney, or for removal of that organ, are very fully described, and with the advantage of personal knowledge on the part of the writer.

The article on hernia is by Mr. John Wood, of London. The author is so well known as a writer on this subject that it is hardly necessary to observe that what he has to say is well said, and worth reading. He has operated for the radical cure over 300 times by his own subcutaneous method, with most remarkable success; and eighteen times by the open method. It is natural, of course, that Mr. Wood should consider his own procedures the best, but he ought not to have omitted some reference to the work of other surgeons in the same direction. The article has no encyclopædic character when this is done. What surgeons want in such a work is a comprehensive view of the proposals of men of acknowledged position; and the editor ought to have asserted his power here, in seeing that those proposals were given.

Man: Whence and Whither? A Lecture delivered at Sheffield. By H. J. HARDWICKE, M.D. Reprinted from *The Agnostic*. Sheffield: Published by the Author. 1885. Pp. 20.

DR. HARDWICKE answers the *Whence?* by a dogmatic and most *an*agnostic summary of the evolutionary views of the origin of Man, which are stated without any apparent misgivings as to their certitude, even in matters of minute detail. The *Whither?* he is not so sure about. We suspect the lecture was considerably above the heads of a popular audience; and we think that the author might well have been content with one transmigration—into the pages of *The Agnostic*—without re-embodiment in independent pamphlet form.

Royal University of Ireland: the Calendar for the Year 1885. Dublin: Alex. Thom & Co. 1885.

THE only fault to be found with the Royal University Calendar for the present year is the lateness of the date at which it was published—namely, the month of April. Considering that, in the Faculty of Medicine at all events, examinations take place only twice a year—in the month mentioned and in October—it is surely not unreasonable to expect that the information contained in the Calendar shall be placed in possession of those interested in the month of January at latest.

In our notice of the first Calendar published by the Royal University in 1883, we gave a tolerably full account of the general

regulations relating to the degrees in medicine and surgery conferred by the University. We note in the present Calendar that a Degree in Midwifery (M.A.O., or *Magister Artis Obstetriciæ*) takes the place of the former Diploma in Midwifery. At page 132 students are reminded that the course of instruction prescribed in Physiology for the Second Examination in Medicine includes Practical Physiology and Histology, including laboratory work in those branches; also that the subjects of examination for the degree of M.B. will include, in 1886—in addition to those already prescribed—Therapeutics, Pathology, and Hygiene; while Surgical Anatomy will in future form one of the subjects at the examination for the degree of M.Ch.

The Calendar is very well brought out, and reflects much credit on the Secretaries of the University, as well as on the publishers.

The Microtomist's Vade-mecum: a Handbook of the Methods of Microscopic Anatomy. By ARTHUR BOLLES LEE. London: Churchill. 1885. Pp. 424.

IN this volume the author professes to give a practically exhaustive collection of the microscopical methods which have been employed in normal anatomy, embryology, and zoology. The work is divided into two parts. The first deals with the general methods of fixing, staining, injecting, embedding, cutting, and mounting; while in the second part are contained the special methods for the examination of the different classes of animals and for the study of the different tissues and organs. The claim to exhaustiveness put forward is certainly justified. Few methods with any pretensions to usefulness are omitted, while a great many which are quite worthless are fully given. The author's justification for this is that these methods may undergo in the future some modification which may make them of great importance, and he gives examples of instances where this has taken place. Still we think that the work would have been more generally useful, particularly to those whose experience of microscopic manipulation is limited, if only those methods were given whose utility is established, or if, at the least, there was more guidance given as to which of the formulæ are useful in their present forms and which require alteration. Still, as it stands, although somewhat confusing, this volume will be found of inestimable service to all those who wish to practise the modern improved methods of microscopical technique.

We cannot agree with Mr. Lee's estimate of the value of the freezing method for the cutting of sections. He adopts a rather curious division of microscopists into zoologists, pathologists, and *dilettanti*, which can scarcely be looked on as exhaustive, and while he considers the freezing method good enough for the two latter classes, for the zoologists he rejects it altogether. If series of sections are required the freezing method is, no doubt, unsuitable, but for the histologist who comparatively rarely requires complete series of sections we think there is no method of such general utility, and which gives, with so little trouble, such good results, as the freezing method when rightly employed; and we fail to understand why a method suitable for the examination of morbid tissue should not be adapted to the examination of the same tissue when in a healthy condition. In embryological work, and in other cases where uninterrupted series of sections are required, nothing can in the most distant degree compare with the paraffin method, but for ordinary histological work we believe embedding in paraffin alters the tissue far more than freezing does after suitable fixing and hardening. Where objects are very fragile or consist of parts which readily fall asunder, embedding in colloidin and subsequent freezing gives in many cases admirable results. This method is not mentioned at all in the Vade-mecum.

On the whole, although the author writes, in our opinion, from too one-sided a point of view and considers too little the requirements of ordinary histology, we believe his book to be of great value and one which the library of no microscopist can afford to be without.

Surgical Handicraft: a Manual of Surgical Manipulations, Minor Surgery, &c. By WALTER PYE, F.R.C.S.; Surgeon to St. Mary's Hospital. London: Henry Kimpton, 82 High Holborn.

THIS book travels over a great deal of ground, including, as it does, not only the methods of applying various apparatus in surgical injuries and diseases, but also many of the operations required in emergencies. It is therefore not only suited for the student but also for the practitioner. It contains a great deal of valuable information, which, although not new, has the advantage of being collected in a convenient form for immediate reference. The illustrations are numerous, and are very well executed.

PART III.

HALF-YEARLY REPORTS.

REPORT ON DISEASES OF WOMEN.

By WILLIAM J. SMYLY, M.D., Univ. Dubl.; F.K.Q.C.P.I.; Gynæcologist to the City of Dublin Hospital; Examiner in Midwifery, King and Queen's College of Physicians.

KRAUROSIS VULVÆ.[a]

UNDER this name Breisky describes a peculiar atrophic contraction of the vestibular tissues, of which he has seen twelve examples, and which in the more marked cases presented the following appearances—apparent absence of the labia minora. From the mons veneris to the urethra the skin was drawn tightly down, covering the clitoris. Passing down the middle of this fold was a line resembling soft cicatricial tissue. The glans clitoridis was either concealed altogether behind this contracted skin or it lay behind a small circular opening in the integument. When the labia were separated the skin above the urethral orifice became stretched, so as to form a prominent transverse fold. This extensive shrinking process resulted in a remarkable stenosis of the vestibule, which, combined with the rigidity of the tissues, caused them to tear upon the slightest provocation, so that fissures resulted not only in childbirth even with pluriparæ, but also from coitus. The skin appeared in the places most affected by the shrinking to be white and dry, and was covered with a rough and thickened epidermis, whilst the neighbouring skin, drawn inwards by this contracted portion, appeared shining, dry, and of a pale reddish-gray colour. The sebaceous follicles of the pudendal folds appeared in most cases remarkably scanty. The microscopical examination made in one case showed a cicatrix-like structure of the papillæ, the connective tissue of which was partly sclerosed, almost homogeneous, only traversed by a few parallel streaks, whereas, as is well known, it usually presents a wavy appearance. The papillæ were irregular in size, mostly small, and in

[a] Zeitschrift für Heilkunde. Bd. VI., p. 69.

places the rete layer of the epidermis was remarkably thin. In none of the sections were there any sebaceous follicles, and in one only a remnant of a sweat gland. As regards ætiology it can only be said that four were preceeded by pruritus, only three suffered from leucorrhœa. Syphilis was not recognised in any, nor had they had eczema or any exanthema. Neither difficult labours nor puerperal inflammation could be adduced as the cause, nor was sugar found in the urine. This affection has not been previously described. It does not correspond to the results of pruritus as described by Kaposi, Schroeder, and Hildebrandt, nor with senile atrophy of the skin described by Kaposi, nor with xeroderma described by Kaposi, E. Williams, and T. Fox, nor with leioderma of Auspitz. He therefore suggests the name kraurosis (shrinking) vulvæ. As to the course and results of the affection nothing is known. Hitherto treatment has been unsuccessful.

MENSTRUATION.[a]

A few years ago Goodman started the following theory of menstruation. The life of woman proceeds in stages, the duration of which is represented by a menstrual period. Each of these stages is divided into two parts—the one being marked by an increase in the vital processes, rise in temperature, higher blood pressure, and larger excretion of urine; in the other there is a diminution in their intensity. At the junction of this flow and ebb menstruation occurs. This is the final result of a periodical disturbance in the arterial system which results from the periodically occurring and gradually increasing contraction of the arterial vessels, which become hypertrophied at puberty. In proof of this Goodman showed by numerous observations that in a large number of cases the temperature fell during menstruation. The work of Mrs. Mary Putnam-Jacobi, "The Question of Rest for Women during Menstruation," supported this theory. In eight cases upon which observations were made it was found that the temperature rose (0·05°–0·44° C.), then fell gradually during menstruation (0·039°–0·25°). In most of the cases excretion of urea was increased during the premenstrual period, and the blood pressure diminished considerably during menstruation. At Hegar's instigation Reinl has made a series of observations upon temperature both in normal and pathological cases, and with very interesting results. The first series of observation were made upon

[a] Wellenbewegung der Lebensprocesse des Weibes v. C. Reinl. Sam. klin. Vorträge. No. 243.

healthy women with normal menstruation. The temperature showed in by far the greater number of the cases a premenstrual rise, sank during the period, and continued to do so afterwards, until towards the middle of the interval it again began to rise. Goodman's theory, therefore, receives fresh support.

The second group included observations upon pathological cases:—

(1) In two of these—in which no organic disease was discoverable, but in which, nevertheless, the discharge recurred profusely every three weeks—it was accompanied by severe general symptoms. The time of the flow corresponded with the summit of the wave.

(2) Cases of inflammation of the ovaries, tubes, ligamentous appendages, chronic perimetritis showed, where menstruation was regular, the normal wave, whilst in two others, in which it occurred irregularly, there was an irregularity in its form.

A third series of observations were made on patients after ovariotomy:—

(1) When the operation was performed in the premenstrual period the occurrence of menstruation, or the hæmorrhagic discharge corresponding thereto, was accompanied by a considerable rise in temperature.

(2) The removal of a single degenerated ovary had, after the wound was healed and if menstruation continued to recur regularly, almost no influence.

(3) After the removal of both ovaries, and with consequent complete amenorrhœa, the form of the wave in what should have been the premenstrual, menstrual, and postmenstrual periods showed no remarkable alteration, which may be taken as proof that it is not the loss of blood which causes the almost constant fall in the temperature.

OOPHORECTOMY.[a]

The most important recent additions to the literature of this subject have been contributed by Professor Hegar, of Freiburg, 1 B., and Drs. Wiedow and Schmalfuss, docent and assistant in the same University. It will be thirteen years on the 27th of this month since Hegar performed the first of these operations, and Battey operated on his first case on the 17th of the following month. Since that

[a] 1. Der Zusammenhang der Geschlechtskrankheiten mit nervösen Leiden und die Castration bei Neurosen von Alfred Hegar. 1885. 2. Schmalfuss. Zur Castration bei Neurosen. Arch. f. Gynækologie, Bd. XXVI. 1885. 3. I. Renzel. II. Leppmann. Op. cit. 4. Wiedow. Die Castration bei Uterus-fibrom. Arch. f. Gynækologie, Bd. XXV. 1885.

time the operation has become firmly established as a valuable addition to our therapeutic resources, yet there still remains a great uncertainty, especially in nervous diseases, in determining when we should be justified in resorting to it. That many cases, even in the best hands, have been rather injured than improved by it has caused much disappointment; the rashness of some in operating in unsuitable cases has brought the whole proceeding into discredit with others.

A cure may be attained by castration in two ways—firstly, by the removal of a diseased organ, which acts as a direct source of irritation; and, secondly, by artificially inducing the menopause.

In the first case the ovary is generally found to have undergone extensive pathological changes, and forms the centre of irritation, or the neighbouring structures, ligament, or tube may be primarily and extensively diseased, and the ovary is removed only because it would be useless to leave it. In this case, of course, ovulation ceases, yet the induction of the artificial climax is only an accident—something unavoidable. The removal of an organ which is causing great discomfort and danger in consequence of pathological change could not meet with severe opposition. The justifiability of removing the ovaries merely for the purpose of terminating ovulation is somewhat more difficult to determine, and requires very careful weighing, because we have here occasionally to deal with healthy organs. And, unfortunately, we have not yet discovered any harmless means whereby the functions of the ovaries can be suspended. Morphia appears to cause amenorrhœa and temporary sterility through the cessation of ovulation (Burkart, Levinstein, Erlenmeyer) with great certainty, but one would not readily resort to such a means.

We derive our knowledge of the results of oophorectomy from observations of persons with congenital absence of the ovaries from the effects of castration upon the lower animals, from the results of the destruction of their organs by disease, or their atrophy from age, as well as from the numerous cases which have been operated upon in latter times, and which teach us the effects of the cessation of ovulation upon certain pathological conditions, whilst the former are rather concerned with physiological effects.

In determining the value of these sources of information caution is required. In congenital defect there are certain complicating circumstances, and the defect is not always restricted to the genital organs. In patients who have been operated upon, and in women at the climacteric, other circumstances, such as disease and advanced

age, cooperate in producing certain results. We cannot form very definite conclusions from the results of castration upon animals as to its effect upon human beings.

Nevertheless the following changes in the genital canal and its functions are constantly observed. In persons with congenital absence of the ovaries menstruation does not occur. In animals which have been castrated when young the uterus does not develop or atrophies when the operation is performed later. In castrated women the uterus atrophies and menstruation does not occur. The same thing occurs after the natural climacteric, and its effect upon pathological enlargement has long since attracted the attention of medical practitioners. The diminution in the size of the uterus is but an example of a general law that the congenital absence of a gland or the cessation of its functions prevents the development or causes atrophy of its duct. These facts remain certain, although the exact relation between ovulation and menstruation has not been determined.

The effect of the cessation of ovulation upon the body generally has not received much attention, and little is positively known about it. The investigations of Puech (Des Ovaries et de leurs Anomalies. Paris, 1873) have cast much doubt upon the idea that the general form of the female figure, the development of the breasts, the *timbre* of the voice, &c., are connected with the ovaries.

From the general effect of castration we can derive, in the present state of our knowledge, no indication for interference. But it is quite possible to do so from its very constant local influence upon neighbouring organs, and especially upon the uterus.

It is of the greatest consequence to determine the connexion, as regards cause and effect, between neurosis and sexual disease. The mere fact of their simultaneous presence proves nothing. Great stress has been laid upon the special nerves affected, and especially those of the lumbar region, and not without reason, since the sexual organs have, it seems, a tolerably independent nervous apparatus. There is, according to Goltz (*Pflüger's Arch.*, Bd. VIII., p. 460, and Bd. IX., p. 552), in the spinal cord a special centre for the nerves of the genitals as well as for those of the bladder and rectum. Spinal symptoms are very much more frequent amongst women than men, and Hegar attributes this to the greater frequency of diseases of the sexual organs amongst them. These spinal symptoms may occur without simultaneous disease of the sexual organs. After a very careful examination of such patients he came to the conclusion that

this was the case in something less than one-fifteenth of the whole number. Of course, extensive disease of the sexual organs is often present without any of these symptoms, but where both are present, as is usually the case, the sexual disease is generally the primary cause and the nervous symptoms the secondary result. But both may be the result of one and the same cause acting simultaneously upon the nervous and genital systems; or the nervous affection may be primary and the sexual secondary. Nevertheless, the presence of lumbar spinal symptoms is of some value in determining the origin of the nervous affection.

In neurosis of distant parts of the body, or general nervous attacks, one often observes that it is preceded by a violent pain in the branches of the lumbar and sacral plexuses, or an aura proceeding from this region. More importance is to be attached to the gradual spread of the affection from the sexual organs upwards. Another point upon which he lays much stress is the limitation of the nervous symptoms to the side upon which the pathological change is exclusively found. Sometimes a nervous affection in a distant part will alternate with symptoms directly referable to the pelvic organs.

The time of invasion and development of the neurosis and its connexion with the phases of sexual life have been much dwelt upon—if it commences at puberty or at the climacteric—if it appears only during menstruation, or between the periods, or during pregnancy. These are all-important points, but their value has been over-estimated. The disappearance of the neurosis under certain conditions, as upon the elevation of a retroverted uterus, is of more consequence. Sometimes it can be ascertained that the neurosis commenced simultaneously with the anatomical changes, and that every exacerbation of the local condition coincides with an aggravation of the nervous symptoms.

The amount and intensity of the anatomical changes are not necessarily in proportion to the nervous affection. Extensive disease, as cancer, is often attended by no symptoms, whilst they are produced by small cicatrices or an apparently insignificant displacement. He considers, therefore, the statement made by Spencer Wells, that ovarian disease is seldom the cause of nervous affections, because he had seldom found them associated with large ovarian tumours, and, when occasionally present, they were not cured by the operation, as of little importance. He partly accounts for the absence of nervous symptoms in connexion with large tumours by their occupying the abdominal cavity, and cannot, therefore, press on the sacral nerves;

their pedicle is also formed so that there is no dragging either upon it or the uterus, especially since from the size of the tumour it cannot frequently change its position. Small tumours, on the other hand, if situated in the pelvis, press upon the nerves; if in the abdomen, they frequently cause nervous symptoms, in consequence of their mobility, by dragging upon the pedicle.

It is of much consequence to determine the way in which the neurosis commenced. The primary effect upon the nerves is due either to pressure, stretching, or exposure. Pressure may be caused by a swollen or displaced organ pressing upon neighbouring nerves, or it may take place within the tissues from inflammatory exudation and contraction. Stretching is usually the result of displacements. The nervous irritation gradually spreads from its point of origin until a vicious circle is formed, so that it becomes impossible to tell which affection was primary and which secondary. Here we must depend chiefly upon a consideration of the grouping of the symptoms, the history of the case, and a process of exclusion. We must exclude, firstly, local diseases outside the sexual system which cause neuroses; secondly, hysteria; lastly, congenital tendency to neuroses, either simple or associated with deformity. There is a remarkable connexion between neuroses and abnormalities, and both apparently spring from the same cause—namely, imperfect development, and are due to the influence of race, family, social position, education, and climate. The neurosis and deformity are not necessarily associated in the same individual, but may occur in different members of the same family, one having the neurosis and another the deformity.

The most careful analysis of each case in the foregoing manner has a direct practical as well as theoretical importance. The risk to the patient is that each man treats his case too exclusively from one point of view, believing that it is purely mental, or purely nervous; another that the blood is at fault; and a fourth attends exclusively to the generative system, whilst it is not always possible to effect a cure through one system only.

In determining the difficult question of treatment, especially where an operation dangerous to life is concerned, it is of the greatest consequence to define precisely the separate factors in the complex symptoms, and Hegar suggests a comparison in the following manner:—*The changes produced in the nervous system by an irritation proceeding from the ovaries + those changes caused by a morbid condition of the blood + those due to derangement of the circulation consequent on failure of the heart = the changes which bring about the*

epileptic seizures. The comparison is seldom so simple, yet it is well to have clearly set before us the way in which such a question should be dealt with.

It is not necessary that the sexual affection should have been the primary one in order to justify radical treatment being resorted to for its cure; it need only be shown to be an important factor in the causation of the neurosis, without the removal of which cure or improvement could not be expected. Even should we be convinced of this, we should still use every other possible means which might possibly benefit the condition before having recourse to operation, and also the discomfort and danger of the patient's condition must be in proportion to the risk of castration. We have further to decide whether the exciting cause of the neurosis will be removed by the operation. This is always the case when the ovaries themselves or the structures in their immediate neighbourhood, and which are removed along with them—as, for example, the tubes—are the sole cause of irritation. The less complicated the conditions present, the more freely movable the parts affected; the less the peritoneum and cellular tissue are involved, the better the prospect of complete cure. In other cases, where we cannot directly remove the cause of irritation—as, for example, in neurosis proceeding from uterine affections—we must satisfy ourselves that the condition of the organ which causes the affection will be removed. Supposing a case of incurable retroversion, with enlargement of the uterus and nervous symptoms, which evidently depend upon pressure on the sacral plexus of nerves, and aggravated by profuse metrorrhagia. In this case we might expect a cure through the amenorrhœa and the reduction in the size of the organ. On the other hand, if there were marked flexion with considerable change of structure, dragging, bending, and compressing the nerves at the angle of flexion, the result of the operation would be uncertain. In such a case it should be modified by stitching the pedicle into the abdominal incision, so as to prevent a recurrence of the displacement.

The most complicated conditions are found in connexion with inflammation and contraction of the uterine appendages; and here, unfortunately, most of the failures occur, which is the more to be regretted, as this class of cases supplies a large contingent of severe nervous diseases.

Occasionally perioophoritis and perisalpingitis affect only the neighbouring portion of the ligaments, so that all the diseased tissue is removed with the ovaries. In these cases the artificial climax

plays no part, since the source of irritation is directly removed. In many cases, however, the removal of all the diseased structures is not possible. Still castration is beneficial in those cases, common under these circumstances, where the menstrual congestion induces a recurrence of the inflammation; but, unfortunately, we cannot count upon its rapid effect, since the inflammatory changes are themselves able to induce periodical hyperæmia.

The prospect is also doubtful in cases of extensive contraction of the ligaments, the result of acute or chronic inflammation. The compression of the nerves embedded in the inflammatory exudation, and the immobility of the pelvic organs, which interferes considerably with the proper performance of their functions, can seldom be relieved. Some, like Klotz and Kaltenbach, have obtained good results even in these cases by removing large portions of the diseased ligaments, stretching the rest, and forcibly separating the uterus and bladder from their abnormal connexions. Here, however, the castration played but a subordinate part. Hegar has had similar cases, but does not consider that operation is generally to be recommended in them, especially as the contraction is liable to recur.

The indications for castration in a case of neurosis are thus stated by Hegar:—*When the nervous affection depends upon pathological conditions of the sexual organs, castration is indicated only when all other methods of treatment have failed, or where benefit could not be expected from their employment. The disease must be dangerous to life or reason, or such as to unfit the patient for any employment and means of livelihood. The exciting cause should be removable by the operation, or at least an important factor in its causation, without the relief of which a cure or improvement could not be hoped for, and in the latter case it should be clear that the remaining conditions are amenable to treatment.*

Sometimes combination of circumstances will indicate the necessity for the operation, which if present singly would not do so—for example, a small ovarian cyst, which is apparently growing larger, and is causing severe neuralgia; or a growing fibroid tumour, associated with hæmorrhage and nervous symptoms, the result of pressure upon the sacral plexus. In weighing the pros and cons the degree of danger to life is to be taken into consideration. In oophorectomy there are remarkable variations in this respect. The extirpation of non-adherent ovaries with relaxed and elastic ligaments is a simple and not very dangerous proceeding; but when they are adherent, or buried in exudation, or attached to a rigid ligament, it is often most difficult and dangerous.

THE SOURCES OF FAILURE.

1. A large proportion of failures are the result of an irrational view of the indications. The results have been especially bad in those cases where no pathological changes in the sexual organs existed, and the indications as to the cause were few and uncertain.

2. Imperfection in the method of operating, especially in leaving behind portions of the ovaries or diseased tubes and ligaments. It should be determined before undertaking the operation that their complete removal is possible, otherwise it is better not to interfere, since the diseased tissues left behind not only continue to act as sources of irritation, but may easily cause extension of the inflammation.

Sometimes, however, even when undertaken upon proper grounds and skilfully performed, the results are negative or imperfect. The most common cause in these cases is the formation of circumscribed inflammations in the peritoneum or cellular tissue of the pelvis, or, what is more frequent, a re-kindling and extension of some previous inflammatory process. These not only keep up the nervous conditions, but may cause irregular or even menstrual discharges of blood. In these cases the object of the castration is not attained. If the cause of the neurosis really was the diseased ovary, we have in its place another source of irritation. In very extensive and old inflammatory processes it is generally better not to operate.

The ligated portion of the pedicle is another source of trouble. It may remain for a very long time without causing symptoms, and then give rise to inflammation.

The symptoms sometimes return after a long interval, owing to contraction of the tissues.

Adhesion of the pedicle to the intestines, or of those to each other, may cause most distressing nervous symptoms.

Relaxation of the abdominal walls leads to displacement of important organs, such as the kidneys, and, through the alteration in the pressure, relations of the abdomen and vagina, to congestion of the uterus and hæmorrhage. Prochownick (*Deutsche med. Wochenschrift*, 1882, No. 36) records such a case, where after castration the results were for months satisfactory until a hernia formed. From that time irregular hæmorrhages set in, with elongation of the cervix. A colpoperineorrhaphia, combined with excision of the cervix and the use of an abdominal belt, completely removed the trouble.

There are cases spoken of where even after the removal of its original cause the neurosis does not disappear. This shows that the nervous affection is no longer functional, but has produced certain changes in the nervous system. Unfortunately it is difficult to detect such cases. The duration of the disease is important, but is no certain guide. More stress is to be laid upon the general implication of the nervous system.

The last cause of failure is that patients return too soon to their ordinary course of life. The after-treatment is of the greatest consequence until the irritated nerves become quieted. This is the more necessary since the induction of the climax often acts unfavourably upon the nervous system. The ordinary nervous symptoms which attend this time act with much greater intensity upon a previously disordered nervous system.

Wiedow has collected 149 cases in which oophorectomy has been performed for uterine fibroids. Of these 15 died (mortality about 10 per cent.) in consequence of the operation. The causes of death were, in 11 cases, septic peritonitis; once paralysis of the heart, on the eleventh day after the operation; once purulent bronchitis and lobular pneumonia; thrombosis in the right ventricle, and nephritis. In two cases of Tait's the cause is not stated.

The two questions upon the answer to which the chief stress is to be laid are—as to the influence of the operation upon the growth of the tumour, and upon the hæmorrhage. He restricts his observations to 88 cases, which he has tabulated, and of the 76 out of this number which recovered the results were as follows:—

	Times
Shrinking of the tumour and immediate menopause, or after a few insignificant hæmorrhages,	54
Menopause (effect upon tumour not known),	7
Shrinking of tumour (effect on hæmorrhage not known),	2
Diminution of tumour, slight irregular hæmorrhage,	6
Menopause for three months, hæmorrhage, retraction of cervix, enucleation of fibroid,	1
Slight hæmorrhage, lasting two days, at intervals of three months (condition of tumour not stated),	1
Menopause for several months (up to two years) and diminution of tumour, then renewed growth and hæmorrhage, in one case cystic degeneration,	3
Irregular severe hæmorrhage, tumour not diminished,	1

Some of these cases are too fresh to draw definite conclusions from. He therefore forms another table of 56 cases in which upwards of a year had elapsed since the operation:—

	Times
Menopause and diminution of tumour,	39
Menopause (condition of tumour not noted),	5
Diminution of tumour with slight irregular hæmorrhages,	1
Menopause for three months, then hæmorrhage, enucleation of tumour	1
Slight hæmorrhages at intervals of three months (condition of tumour not noted),	1
Reduction of tumour for a time, then renewed growth,	3
Irregular severe hæmorrhages, no shrinking of tumour,	1

Since much importance has been attached to the size and position of the tumour he considers it of importance to differentiate them in this way.

To decide the question as to whether the size of the tumour will form a limit to the applicability of castration he tabulates twelve cases in which it reached to or above the umbilicus, with the following results:—

	Times
Diminution of the tumour and menopause immediately or after insignificant hæmorrhage,	10
Diminution of the tumour (confirmed after five years), with slight irregular hæmorrhages,	1
Diminution of tumour, menopause for several months, then slight regular hæmorrhage,	1

These results show that the size of the tumour is not a contra-indication for the operation. The position is of as little consequence as the size, since the statement that subserous and intra-ligamentous growths do not shrink is refuted by a number of Hegar's cases as well as those of Fehling, Martin, and others.

From these statistics he would limit myomotomy to fibrocystic and subserous pedunculated tumours. He considers that castration compares very favourably with myomotomy, in which we have to count upon a mortality of 33 per cent. He denies Lawson Tait's statement that menstruation depends upon the tubes, since in cases—as those of Nussbaum, Pernice, Fehling, and Tauffer—the tubes were left intact, and yet menopause occurred, and that in cases of extensive pelvioperitonitis, where it was not found possible to remove the ovaries completely, menstruation continued unchanged after the operation, although the tubes were completely removed.

A NEW OPERATION FOR THE CURE OF PYOSALPYNX.[a]

The methods of operation hitherto employed have been designed, firstly, to reach the disease by laparotomy; they are (1), the extirpa-

[a] Zur operativen Behandlung der Pyosalpynx. Dr. Wiedow. Centralblatt für Gynækologie. No. 10. 1885.

tion of the entire sac, with or without subsequent drainage, through the vagina or the abdominal wound; (2) partial excision or incision of the sac, and stitching it to the abdominal wound, and drainage through the incision. Secondly, by puncturing through the vagina and aspirating the pus. The conditions of pyosalpynx are so diverse that no one method will suit all cases. Total extirpation, which is certainly the safest method, is unfortunately often impossible, or very difficult and dangerous, especially where the tumour is firmly adherent to neighbouring structures, notably the posterior layer of the broad ligament and the floor of Douglas' space. The tube is easily burst in separating the adhesions, and, after its removal, an extensive bleeding surface remains in the abdomen, which favours the occurrence of peritonitis. When the tumour is adherent to the deep structures in the pelvis it is exceedingly difficult to stitch its walls to the abdominal incision. In the first place, it cannot be easily drawn forwards; and, secondly, the adhesions drag upon the sutures, so that they cut through, leaving a space through which the peritoneum may become infected. The operation which he proposes for such cases is to make an incision from the vagina into Douglas' space; then introduce the finger to discover the attachments of the tumour with the pelvic organs. If it be found that the abdominal cavity is everywhere closed by adhesions, the tube is to be opened by a free incision. Should the finger, however, freely enter the abdominal cavity, strips of iodoform or sublimate gauze are introduced, and the wound plugged as far as the wall of the abscess. After waiting for a few days, until one is certain that adhesions have formed between the sac and the peritoneum, then make an incision. This proceeding is recommended in those cases in which the tumour is situated deeply in the pelvis and is fixed by adhesions. In cases where the tumour lies in front of the ligamentum latum and close to the abdominal walls, the incision is made parallel to Poupart's ligament, and the case treated in a similar manner. Both these methods may be combined, so as to attain free drainage.

An interesting case in Hegar's practice is detailed, but we can only notice the operative measures adopted. On December 20, 1884, an incision, six cm. long, was made above Poupart's ligament. Upon opening the abdominal cavity the tumour was found to be adherent to the omentum above, whilst at the sides the finger passed freely into the abdominal cavity. The wound was plugged with iodoform gauze.

On the 25th of December Douglas' space was opened through the

vagina. The finger introduced found the tumour fixed in all directions by soft adhesions, which could easily be broken down. The abscess was incised, and a quantity of greenish-yellow pus escaped. A curved trochar and canula were then thrust through the abscess and made to emerge at the first incision above Poupart's ligament, where a counter opening was made, and a thick india-rubber drain introduced. The cavity was washed out daily with sublimate solution, 1:2000, and on the 21st January of this year the patient was discharged cured.

THE ABORTIVE TREATMENT OF TYPHOID FEVER BY MERCURIAL INUNCTION.

NONE of the measures as yet suggested to abort typhoid fever have materially influenced its treatment by physicians in this country or in England, whatever may have been the impression they have made upon the continent of Europe. The latest treatment, although a modification of the mercurial plan which has been for some time before the profession, promises results which demand for it a trial, based as it is on an experience with one hundred cases, recently published by Dr. Kalb, in the *Berliner klin. Wochenschr.* for January 19, 1885. Dr. Kalb's method is to rub into the skin 90 grains of mercurial ointment, daily for six days, the first application being made to the abdomen, and at least half an hour being consumed in the friction, which must not, however, be trusted to the patient himself. On the second day the ointment is to be rubbed on the inner side of one thigh, on the third on the other thigh, on the fourth again on the abdomen, on the fifth on one of the thighs, and on the sixth on the remaining thigh. The inunction is preferably made in the evening. The ointment is not quite fresh, but slightly rancid, since it is believed that a greater uniformity of result is obtained. Coincidently, Dr. Kalb administers a powder containing 7·5 grains of calomel and three-quarters of a grain of opium every five or six hours, the opium being added to prevent the calomel from acting as a purge. No other medicine is given except alcohol, which is, however, administered in full doses. He does not claim, however, that the method is always successful, but only that 80 per cent. of the patients thus treated become free from fever within ten days of the beginning of the treatment. The treatment is also only efficient if adopted within the first nine or ten days, in general before the rose-colored rash has made its appearance; indeed after this time it is useless. While he has observed salivation, it has always been slight and confined to transitory swelling and sensitiveness of the gums, and Kalb holds responsible for it the calomel rather than the mercurial ointment.—*Medical News*, June 6, 1885.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ACADEMY OF MEDICINE IN IRELAND.

President—J. T. BANKS, M.D.
General Secretary—W. THOMSON, M.D.

SUB-SECTION OF ANATOMY AND PHYSIOLOGY.

Chairman—D. J. CUNNINGHAM, M.D.
Sub-Sectional Secretary—J. A. SCOTT, L.K.Q.C.P.

Opening Meeting, Thursday, February 19, 1885.

The CHAIRMAN in the Chair.

Introductory Remarks.

The CHAIRMAN expressed his sense of the honour done him in electing him to the chair for the session—an honour which he prized highly, not only in being considered worthy of succeeding such men as Dr. Macalister and Dr. Purser, but also on account of the great interest which he had all along taken in this department of the Academy.

Patent Foramen Ovale.

MR. BROOMFIELD exhibited his patent Eustachian valve, also a model for showing to a class the changes in the crystalline lens during accommodation.

Method of Exhibiting the alternation of the Sectors of the Crystalline Lens.

PROF. BENNETT exhibited a facile method of demonstrating alternation of the sectors of the crystalline lens of the eye to a class by injecting either into the posterior side of the capsule of the lens, or between the vitreous humour and retina, a small quantity of mercury which formed a bright reflecting surface, the shape of which depended on the surrounding tissues. The results obtained by the mirror posterior to the vitreous humour appeared to give the best results. He stated that for a successful demonstration an eye not too fresh and a top light are desirable.

The CHAIRMAN was glad Dr. Bennett had returned to his old subject, in which he had formerly gained so much distinction. He had certainly shown an ingenious method of demonstrating the sectors of the eye, which it was impossible to do with the parts together.

DR. A. H. BENSON concurred.

Anomaly of Arch of Aorta.

MR. M'ARDLE read a paper on this subject. The branches derived from the transverse portion from right to left were—right carotid, left carotid, left vertebral, left subclavian, and right subclavian. The only ones having a peculiar course were the right carotid and right subclavian. The former at its origin was somewhat to the left of the trachea. After ascending for half an inch it passed directly to the right, in front of the sixth and seventh rings of trachea, and then upwards on the right side of that structure. The subclavian came off from the posterior aspect of the arch on a level with the remains of the ductus arteriosus; thence it passed in from off the second and third dorsal vertebræ, and behind the trachea and œsophagus, so that these structures were compressed between it and the foregoing vessel. The only other peculiarity of this trunk was its cone-shaped origin, where it was at least half as large as the aorta. It diminished to the normal size before giving off a single branch.

The CHAIRMAN said the case which Mr. M'Ardle had so well described was one of the commoner varieties met with in the dissecting-room of the anomalous arrangement of the aortic branches. It was one of the most interesting of all the anomalies, because at first sight it appeared to be very difficult of explanation. The difficulty, however, at once disappeared on close examination. It had been shown lately that the anomaly was associated with the transference, or transposition, to the right side of the thoracic duct. This was explained by supposing that the thoracic duct, like the aorta, was laid down in the form of two lateral tubes, which afterwards fuse. It was interesting to notice the relation of the laryngeal nerve, because the fourth arch, counting from above, was obliterated, and therefore it was not recurrent at all, having nothing to hook round. There were about five cases on record of the transference of the thoracic duct to the right side. These were given by Drs. Crookshank, M'Donnell, Brown, and Arthur Thomson of Edinburgh.

PROF. BENNETT instanced, as unique in its surgical aspect, Kirby's case, in which he examined the parts after death, and in which a foreign body lodging in the œsophagus had wounded a subclavian vessel abnormally in its way. Still more remarkable was the fact that the patient, though suffering from an impacted body in the œsophagus, died from an entirely different cause—namely, the impaction of some portion of food in the glottis.

MR. M'ARDLE, in reply, said in removing a very large mass of glands from the neighbourhood of the aorta, the thoracic duct was cut across.

It passed between the aorta and the œsophagus. The recurrent laryngeal nerve passed directly to the right side. There was a case noticed by Hyrtl (who quoted from Lister), in which an artery coming from the left side passed between the œsophagus and trachea.

Anomalous Coronary Branch arising from Pulmonary Artery.

Dr. Brooks gave a description of the anomaly:—This case occurred in an old female subject in the dissecting-room of Trinity College, Dublin. The abnormal branch arose from the left anterior sinus of Valsalva of the pulmonary artery; it was rather under an eighth of an inch in diameter, and its branches ramified chiefly on the infundibulum of the right ventricle, a few small ones supplying the coats of the pulmonary artery. Both the normal coronary arteries were present, and were rather large.

The Chairman testified to the accuracy of Dr. Brooks' observations upon the extremely interesting and rare case which he had described. At the outset he was himself sceptical, never having seen an artery with the same origin before, and it was only after considerable pains on Dr. Brooks' part that he was persuaded to believe the case was really a *bonâ fide* one. There was only one other case of the kind on record.

Dr. Little had never seen anything analogous to the case.

Dr. Purser observed that as there was free anastomosis it must have carried arterial blood, and must have acted as a vein. The blood must have flowed from the point of high to the point of low pressure.

Dr. Brooks, in reply, said the anastomosis was tolerably defined in one part. He had no doubt some of the arterial blood must have travelled on account of the high pressure. Still the communication did not seem to be sufficiently free for the whole of the blood to go that way.

Musculus Sternalis in Anencephalous Fœtus.

The Chairman communicated a paper which he received from Prof. Shepherd, of Gill College, Montreal, on "Musculus Sternalis in Anencephalous Fœtus." In six such specimens Professor Shepherd had found the anomalous muscle, and in five of these he had been able to make out its nervous supply to be the same as that of the pectoral group of muscles.

Dr. Brooks mentioned having seen two cases this year (one of which he showed the Chairman) of the pectoralis minor getting a nerve as a branch of the second intercostal. Seeing, then, that in some cases the pectoral muscles may get a branch from the intercostals, it was an additional argument in favour of the musculus sternalis really belonging to the pectoral group.

Mr. Abraham expressed himself greatly interested in the Chairman's paper. It was certainly with great diffidence that he himself brought forward the view therein expressed two years ago, and therefore it was

gratifying to him that that view had received such able confirmation since then. From his own observation he quite agreed with the Chairman that the muscle was so frequent in females. There was one point as regards the Chairman's new theory to which he would call attention as to the fact of the muscle occurring in anencephali. He could not see what connexion that could have with respiration, because anencephali were always born dead, and never attempted to respire; and, therefore, if the muscle was of any use to that creature, it was difficult to say that it had any connexion with respiration.

Prof. Bennett said the statement that all anencephali were born dead was going too far; because he knew that one of those examined was born and breathed for four hours after delivery; so that, in that instance, the respiratory function was established fully and completely extra-uterine. The band from the pectoral, across the free axilla, was an irregular muscle of the pectoral group, and was peculiar to females.

The Chairman said the point which Mr. Abraham had mentioned in regard to the anencephalous fœtus could be explained only in this way—that if we have impressed upon us a slight tendency towards the development of that muscle, it would be understood that where nature was turned topsy-turvey, any such impression might be strongly developed. The chest of the anencephalous fœtus was seldom employed for respiration, and was generally stinted in its character. He bore out Dr. Bennett's observation in regard to the greater frequency of the axillary band in females than in males, and that he was correct in placing it in the pectoral group. The case mentioned by Dr. Brooks, in which the supply was given to muscles from the intercostal nerves, was a very interesting one.

Vena Azygos Major ascending on the Left Side, and the bearing of this Anomaly on the Development of the Azygos Blood-vessels.

Dr. Brooks said:—This case occurred in a male subject, and appeared to be a transposition, from right to left, of the normal arrangement. The vein ascended on the left side of the bodies of the dorsal vertebræ, receiving the left intercostal veins, with the exception of the first and second, and also a branch from the right side, which entered it at the level of the eighth dorsal vertebra, and was formed by the confluence of two veins, which lay on the right side of the bodies of the vertebræ; the superior of these two received the sixth, seventh, and eighth intercostal veins; the inferior collected the blood from the ninth, tenth, and eleventh intercostal spaces. The left azygos, thus formed, attained to the size of an ordinary azygos major; it crossed the junction of the transverse and descending portions of the aortic arch, and opened into the left innominate vein. A small vein opened in the ordinary position of the (right) azygos major; it was formed by the confluence of four intercostal veins,

but the trunk lay, not in the ordinary position of the azygos major on the bodies of the vertebræ, but on the ribs external to the gangliated cord of the sympathetic. This peculiar position was interpreted as representing a larger portion of the posterior cardinal vein persisting than usual. A remarkable bend in the course of the left azygos, whereby a portion crossed the necks of the tenth and eleventh ribs, was explained in the same way. Reference was made to the symmetrical condition of the venæ azygos in the embryo as affording a ready explanation of the transposition—the right, instead of the left, azygos system having been broken up.

The CHAIRMAN remarked that this anomaly was also of interest from a Comparative Anatomy point of view, because in some of the lower animals it was the normal arrangement for the vena azygos major to pass up the left side, the opposite to that in the human subject. In the sheep this was the case. In marsupials it sometimes chooses the one side and sometimes the other. The Tasmanian wolf was an example of its passing up the right side as with ourselves.

Description of Andaman Skeleton compared with those of other races.

The CHAIRMAN gave a description of an Andaman skeleton, and compared it with those of other races. He referred to the two elaborate papers which had been communicated by Prof. Flower to the Anthropological Institute upon the osteology and affinities of the Andaman islanders, and showed how closely the skeleton in his possession bore out the many remarkable facts described by that author. He especially directed attention to the lower jaw, vertebral column, and the sternum. He compared the lower jaw with that of a European child of five years old, and showed how closely they resembled each other. In both the feebly marked chin, the poor development of the basal or subdental part of the body, the low ascending ramus, and shallow coronoid notch, were very manifest. The cervical vertebræ were distinguished by their spinous processes exhibiting very little tendency to bifidity. The bodies of the lumbar vertebræ were not moulded in such a fashion as to give any assistance in the formation of the lumbar curve—in fact, the sum of their anterior measurements was considerably less than the sum of their posterior measurements. The sternum was remarkable for its extreme narrowness, but this is a feature which the author considered might possibly be an individual peculiarity, as he had had no opportunity of examining this bone in other Andaman skeletons, and Prof. Flower had not mentioned it in either of his papers.

The author concluded by stating that Prof. Flower had unquestionably put his finger upon the salient point in connexion with the Andaman skeleton when he called attention to the many infantile characters which it exhibited.

MEDICAL SECTION.

President—F. R. Cruise, M.D.; President and Fellow, King and Queen's College of Physicians.
Sectional Secretary—A. N. Montgomery, M.K.Q.C.P.

Friday, March 27, 1885.

Dr. Henry Kennedy in the Chair.

Hyperpyrexia in Rheumatic Fever.

Dr. Finny illustrated the subject of very high temperature in rheumatic fever in its clinical aspects, by recording two cases which had occurred in his hospital practice. [They will be found in the February Number of this Journal, Vol. LXXIX., page 111.]

Dr. Quinlan admitted that cases in which there was a very high temperature were very fatal; but, at the same time, wished that the salicin treatment had been pushed much further than Dr. Finny stated. He had given up to 60 grains, frequently repeated, and had found the drug perfectly harmless in these doses and preferable to salicylate of soda.

Dr. Foot directed attention to the circular published twenty-five years ago, in which an analysis of twenty-nine different modes of treating rheumatic fever by eminent Dublin practitioners was given, and also referred to the expectant treatment by Hughes-Bennett, of Edinburgh. As all these plans of treatment seemed equally successful, he thought that undue credit ought not to be given to salicin. He thought that once the temperature rose above 106°, certainly above 108°, the case would prove fatal.

Dr. James Little said he was the author of the circular referred to, which was published in the *Dublin Journal of Medical Science*, of which he was the editor. The various modes of treatment advocated could hardly be described in the language of Dr. Foot as equally useful, but rather as equally useless. Any person who had observed the effect of the new remedies—salicylate of soda and salicin in acute rheumatism—and remembered how long the case went on under the old treatment, must feel gratified with the present therapeutic resources. Under the old system two kinds of treatment had been formularised and introduced—the alkaline, by Fuller, and that of blistering the joints, by Herbert Davies. He recollected sufficient of these to say that skill in using the particular treatment was of great consequence. Dr. Quinlan had judiciously insisted on the necessity of large doses of salicin to obtain good effects, and, in the same way, the alkaline treatment had been often abandoned without carrying out the instruction to render the urine alkaline and keep it so.

The salicin treatment did exceedingly well, but, in the majority of cases, more rapid results were obtained from salicylate of soda. The most dangerous cases were those in which sweating was produced.

Dr. R. Montgomery said that he had often seen the late Sir Dominic Corrigan give 1 grain doses of opium, frequently repeated, with good results.

The Chairman confirmed the treatment which Sir Dominic Corrigan had used, while attending carefully to the secretions. He had been himself in the habit of combining the opiate with salicylate of soda, with the result of keeping the patient easy and of enabling the disease to be conducted through in as many days as it used to occupy weeks. Hence he did not doubt the specific effect of the treatment, particularly the salicylate of soda. The bath was a hazardous remedy, the patient being liable to get a dangerous chill after immersion. When blood-letting was in vogue he had seen a considerable number of cases treated by that method with good effect; he had seen epistaxis occur in the disease.

Dr. Finny, in reply, regretted that his paper had not elicited any remarks on hyperpyrexia. Dr. Quinlan had recommended to "beat down" the temperature, but he had not said whether he would employ salicin when it exceeded 106°. Two of the speakers had, indeed, stated that when the temperature reached 106° it was useless trying anything. But he had pointed out that in one case, when the temperature registered 107·2°, some good was done, and he quoted Surgeon-Major Quinton as having brought down the temperature by treatment by cold, which he (Dr. Finny) considered the fastest way to do so.

Senile Dementia.

The chair having been vacated, and taken by Dr. Finny,

Dr. Henry Kennedy read a paper on Senile Dementia, which occurred in an old lady eighty-six weeks subsequent to the fracture of the neck of the thigh-bone. [It will be found in the May Number of this Journal, Vol. LXXIX., page 406.] After the usual remedies had been tried and failed, a course of the extracts of hyoscyamus proved useful, and, on the addition of small doses of mercury, a complete cure was obtained except that her sleep was not restored. This symptom, however, was at once conquered by placing the patient with her head to the north. The author entered at some length into the reasons for the treatment adopted. He had seen the case.

The Chairman (Dr. Finny) said it was an important question what would answer best in dementia with great sleeplessness. He had not himself succeeded well with chloral, or even opium, of which large doses had to be given to produce any effect at all.

Mr. Moloney suggested open air exercise or driving as much more satisfactory than drugs to induce sleep.

Mr. Foy specified the three preparations of hyoscyamus—the crystalline, the amorphous, and a soft extract known as hyoscyamin; but the only reliable preparation was the alkaloid, as prepared by Merck, of Dresden.

Dr. Kennedy briefly replied.

The Section adjourned.

Friday, May 1, 1885.

The President in the Chair.

The Form of Pneumonia now prevalent in Dublin.

Dr. James Little detailed thirteen cases of pneumonia which he had seen in private during the past winter; of these eight had proved fatal; and the author drew attention to the frequency with which pneumonia, as at present epidemic, was accompanied by grave complications. He then invited discussion on the treatment of the disease, and specially on the question whether quinine exercised any beneficial influence.

Dr. J. W. Moore, discussing the ætiology of the disease from his experience at Cork-street Fever Hospital, considered the treatment of acute pneumonia was very little more within the grasp of the physician than the treatment either of typhus fever or of enteric fever. That treatment resolved itself into dealing with symptoms as they arose, each of which might threaten life. Statistics indicated that acute pneumonia had been very prevalent in Dublin, and, as Dr. Little observed, the mortality of the present epidemic was exceedingly high. Thus, of 101 cases treated in Cork-street Hospital during the twelve months ending March 31, 1885, 24 died, or very nearly 24 per cent. It was interesting to note the increase and decrease in the admissions according to the season, the majority of cases being invariably admitted in the months of April, May, and June inclusive; not in the coldest season, but during the period of transition from the damp cold of winter to the dry cold of spring and early summer. Another feature of interest was the remarkable correlation between acute pneumonia and enteric fever. During the winter he saw three cases in which the diagnosis of croupous pneumonia was unequivocal, and yet when the time for resolution of the lung came the fever ran on, and the cases turned out to be typical instances of enteric fever, with rose spots, &c. In reference to the instance given by Dr. Little of more than one case of pneumonia occurring in the same house, Dr. Walter Smith communicated recently a still more remarkable instance in which four cases of pneumonia occurred under the same roof. Similar instances were increasing in frequency. Some years ago a young lad was admitted from a house in Malpas-street, suffering from croupous pneumonia. Three weeks afterwards the father came in with the same

disease. In his opinion acute pneumonia was an essential or specific fever, analogous in its origin to enteric fever. How, then, did the disease break out after exposure to cold or chill? Bearing in mind that the poison was determined towards the lungs, there was an additional exposure to the poison of the disease, and the receptivity of the patient was increased. They could not hope to stop the course of a typhus fever, nor could they stop the course of this specific fever, which tended to a crisis at the conclusion of six or seven days. The sequelæ mentioned by Dr. Little as following pneumonia afforded further proof of its specific character.

Dr. Fitzpatrick recollected, half a century ago, seeing cases in the Meath Hospital treated by the late Dr. Stokes with tartar emetic. In Edinburgh, at the same period, the treatment was on a different principle, consisting of small doses of calomel, opium, leeching, and cupping. On returning again to the Meath he found the treatment had been changed. In explanation, Dr. Stokes said his theory was that, since the invasion of cholera, the public constitution had changed, and that patients would not bear the same treatment as in former days. He had himself had under treatment four cases of croupous pneumonia among the children of one family. His treatment comprised chlorate of potassium and bark and blisters—indeed he attached the greatest importance to blistering as a most efficacious remedy.

Dr. Duffey considered that physicians were much too chary in giving opium in pulmonary disease. There was a prejudice against it; but any bad results could be averted or kept in check by careful observation of its effects. He had seen good results follow from the careful and regular administration of opium in cases of croupous pneumonia. Given hypodermically, the pain of pleurisy (which was generally associated with pleuro-pneumonia) was relieved. He had himself been in the habit of using ergot combined with opium. Ergot was a powerful cardiac depressant, besides constricting the blood-vessels. Therefore, in a disease like pneumonia, in which there was a large quantity of blood in the lungs, it diminished the amount going through the pulmonary vessels. Quinine, he submitted, was utterly useless; he never saw the slightest good resulting from it. Poultices, he thought, did more harm than good, and putting a large poultice round the chest was bad treatment. Aconite ought to be looked upon as a cardiac depressant, too.

Dr. Henry Kennedy spoke of a gentleman, aged fifty-four, already alluded to, who, having got a wetting on two days in succession, was ill in bed from Tuesday till Saturday without seeing a doctor. He died after an extraordinary fight for his life, which might have been saved had he obtained advice sooner. On seeing the case, he came to the conclusion that the patient had a weak heart. He agreed with Dr. Duffey that quinine was not generally good treatment. Another medicine was infinitely more useful—namely, a pure stimulant which would agree

where quinine would disagree. As the result of his experience, he found that quinine did not equal either wine or whisky. Although the effect of the three was much the same in improving the pulse, yet the strong drink was the better treatment as agreeing better with the patient. He placed reliance on mercury, with which he had treated a number of cases, giving small doses—commonly the blue pill, sometimes even the bichloride of mercury. He had great faith in blistering pneumonic cases, but to be of service the blister should not be an insignificant four-inch one, but the size, say, of a page of foolscap paper. That hint he took from Sir Henry Marsh, who said, "If you want to do any good, apply a large blister." Poultices were, in his opinion, quite secondary to other treatment.

Dr. More Madden observed that in the Hospital for Sick Children pneumonia was one of the most common diseases. Within the last few months pneumonia had been unusually prevalent and peculiarly fatal in its character. In one instance he had two and in another three members of the same family suffering from pneumonia—a fact worthy of observation in connexion with the epidemic form of pneumonia. Speaking from his fourteen years' experience of pneumonia in that hospital, the different forms of pneumonia occurring in different years required different treatment. He could not agree as to the inefficacy of medicine in all febrile diseases. His opinion was that, while fever could not be cut short, it might be guided to a safe termination by medical treatment. Pneumonia was a fever with local complication. The cases he had seen recover had been treated with quinine, and poultices had been applied. He had found it necessary to give mercury in combination with quinine and other treatment. He believed in the antiphlogistic power of mercury, and had he the disease himself he would like to be wrapped up in poultices and to be given mercury, quinine, and stimulants.

Mr. Joseph Kenny observed that in the Workhouse Hospital of the North Dublin Union there was an extraordinary prevalence of pneumonia. In connexion with the outbreak of the disease he noticed, either concurrently or immediately before it, the prevalence of erysipelas. In the present epidemic the disease attacked the left lung with greater frequency than the right, and (contrary to the usual experience) the upper lobes of the lung rather than the base. In young subjects his experience was contrary to Dr. Little's—the mortality was exceedingly low. Dr. Duffey had stated that the application of poultices was not only of no good, but the opposite. It was doubtless the misapplication of poultices he meant, for if properly applied poultices were exceedingly useful. Quinine treatment was what he adopted, but he had combined it with gray powder, and digitalis or ipecacuan, with or without opium, as the case demanded. Blisters followed by poulticing he found to be of great use. Believing as he did that pneumonia was a septic disease, he

should regard quinine as a remedy of some value, whereas a man who looked on the disease as the result of cold might not take that view at all.

The REGISTRAR-GENERAL said that the cases of pneumonia spoken of by the present speakers were of a more severe character than those with which he was familiar. Some years ago he came to the conclusion that pneumonia was essentially a fever, and that too an infective fever.

SURGEON ORMSBY said he had performed venesection in a case of croupous pneumonia at the Meath Hospital with good results.

DR. HAWTREY BENSON had treated cases with quinine, stimulants, poultices, and blisters.

DR. FINNY said he had never seen so many cases of pneumonia as within the last six months, and it was different from the pneumonia of former years. A great amount of lung tissue became involved. In ordinary pneumonia the fever ran to a high pitch, the crisis taking place about the eighth day. But in the present epidemic the temperature rarely passed 103°, or from 103° to 104°, and the crisis occurred about the fifth day. Another point of interest was that the disease spread from one lung to another, pleurisy being very common. Acute delirium, such as was seen in typhus, was also a common symptom of the disease. Amongst the physical signs of pneumonia one frequently present was the tympanitic resonant note above the attacked portion of the lung, and this was followed by extension of the disease. His experience differed from Mr. Kenny's—the disease attacked all the lobes indifferently. Statistics seemed to point to the lower lobe, but in the present epidemic the one attacked was just as often the upper lobe. The treatment he adopted was exactly the same as for a severe fever. He treated the patient and not the disease. Adapting the treatment to the suffering of the patient, he gave quinine in moderate doses, and morphia or opium internally, and local relief by cupping and poulticing. Stimulants were also necessary. His attention was directed to strengthening the heart and inducing sleep.

MR. DOYLE said he had in all cases, for the last three or four years, been in the habit of using local lukewarm packing, which he found relieved the pain quite as effectively as ice-packing did. He would give large doses of quinine once in the twenty-four hours to bring down the temperature. In treating pneumonia the fever must be treated.

MESSRS. M'CULLAGH and BURGESS having also spoken,

DR. DUFFEY, as a personal explanation, said the point of his remark on the uselessness of poultices was as regards the effect of stopping the disease. He frequently used poultices himself, but he preferred cotton wool.

The PRESIDENT concurred as to the fatality of pneumonia in the present epidemic, especially once the meridian of life was passed. One point escaped attention in the discussion—namely, the presence of pneumonia in renal disease either of a temporary or of a permanent character. It

was astonishing how many cases there were of renal disease in those who passed sixty years of age. A number of cases would exhibit albuminuria even when little expected. With regard to treatment, admitting pneumonia to be a fever, the great object must be to keep the patient alive until the crisis arrived on the seventh, eighth, or ninth day. Upon this principle, even without reference to considerable practical experience, he believed in the value of quinine. He believed that quinine was one of the drugs—perhaps the only drug—which in a vast proportion of cases enabled the physician to overtake the disease or enabled the patient to live till the disease subsided. He had seen valuable results from blisters in moderation, and at the stage when the temperature came down and resolution was hanging fire—just about the same time that one would use mercury and iodide of potassium. On the other hand, he had seen terrible evil, even fatal results, ensue from the application of very large blisters in pneumonia. Feeding and stimulants must occupy a prominent place in attending to those cases.

Dr. Little, in replying, was sure that the President was correct in saying that a great number of cases of pneumonia were those of old standing renal disease, and for years past he had himself regarded death as a foregone conclusion in cases of patients attacked with chronic Bright's disease. He could speak in the most confident way as to the value of packing of the chest in croupous or lobar pneumonia. As to blistering, his opinion was in accord with that of the President. *Post mortem* examination showed violent pleural inflammation underneath the blister. In an autopsy, where a man had been extensively blistered, he traced the blisters on the pleural membrane in patches of lymph, so that he had a great horror in applying blisters until the temperature had come down. The physician could avert the tendency to death. Leeching or blood-letting averts the tendency to death arising from over-loading of the right side of the heart. Hypodermic injections of morphia, when the patient was in a state of dyspnœa with intense pain, induced sleep, and contributed to recovery. There were other ways of securing sleep, stopping nervous disturbance and averting the tendency to death; but with regard to affecting the disease he was in doubt. They should not be led away by speculative considerations. They should not, as Sir James Paget expressed it, be guided by the dim and treacherous ray of speculation, but observe the effects of quinine, or other remedies, unbiassed by theoretical reasoning. He had himself been persuaded by a medical friend to try ergot, but he never saw any good effect from it. For his own part, he had at the outset faith in quinine, then he began to lose it, and now his faith was coming back because in the practice of other physicians the cases did well where the quinine was fairly administered.

The Section then adjourned.

SURGICAL SECTION.

President—E. H. BENNETT, M.D., President and Fellow of the Royal College of Surgeons, Ireland.
Sectional Secretary—WILLIAM STOKES, F.R.C.S.I.

Friday, March 20, 1885.

The PRESIDENT in the Chair.

Excision of the Clavicle.

MR. WHEELER read a paper on complete excision of the clavicle for osteo-sarcoma, and on partial excision of clavicle for necrosis. [It will be found in the May Number of this Journal, Vol. LXXIX., page 369.]

The PRESIDENT suggested that the paper should have been entitled "Excision of Diseased Clavicle," instead of "Excision of the Clavicle." Excision of the healthy clavicle was of easy performance, but that of a diseased clavicle was an operation of great difficulty, according to the disease affecting it. The power preserved in the upper extremity was wonderful, as though the patient had some power of supplementing the want of the bone.

MR. TUFNELL, having had the opportunity of witnessing both operations, called attention to the advantage of previous examination of the chest and kidneys. In the case of the man on whom Mr. Wheeler had operated, both were found sound, and but for the examination the operation would not have been performed.

MR. WHEELER, in reply, said the reason he did not actually entitle his paper "Excision of Diseased Clavicle" was that at the outset he mentioned it was a case of osteo-sarcoma.

Excision of the Shoulder.

MR. WHEELER read a paper on Excision of the Shoulder. [It will be found in the June Number of this Journal, Vol. LXXIX., page 465.]

MR. THORNLEY STOKER recognised the result of Mr. Wheeler's skill in the example exhibited to be almost beyond criticism. But he challenged Mr. Wheeler's statement that it was necessary to fall back upon military statistics for a knowledge of the success attained in dealing with gunshot injuries. There was no parallel in the conditions of operating for gunshot injuries in the field and operating in civil practice for disease, the circumstances and surroundings being entirely different, and also the fact of the well-known mortality attending operations in the field.

MR. BARTON concurred with the author that the operation of excision of the shoulder was rare, but in the reasons for it the most important one was omitted—namely, that the shoulder-joint was subsidiary to the move-

ments of the scapula on the ribs. The condition of an ankylosed shoulder was very different from that of an ankylosed elbow, which rendered the upper extremity useless, and therefore a recognised operation which every surgeon would perform. But an ankylosed shoulder-joint was by no means useless. The supplemental movement of the scapula on the ribs gave such a wide range of motion that it became unnecessary to operate. For his own part, instead of a straight incision through the deltoid muscle, he preferred a U-shaped incision posteriorly, about the middle of the scapula, and taking in the posterior edge of the deltoid, as giving ready access to the joint, and natural drainage. He was not obliged to do more than scrape off the diseased cartilage from the glenoid cavity.

Mr. Wheeler, in reply, said Mr. Stoker had missed his remark that for comprehensive statistics they had to go to military surgery, because in civil practice the operation was comparatively rare. As to the well-known mortality in the field, the statement was open to exception, because in Larrey's cases all the first succeeded, whereas in the Schleswig-Holstein campaign there appeared to have been great mortality following amputations of the shoulders and legs; and again, in the next serious battle, cases of excision of the shoulder did very well. It was therefore unaccountable why there was great mortality consequent on operations on some fields of battle, and very little on others. He had alluded to the ankylosed joint to which Mr. Barton referred. The drainage, by passing the tube to the inner side and making an internal opening, was originally recommended by Surgeon-General M'Kinnon in the Maori war, and he had published in the Army Statistical Reports of 1866–67 many cases of excision of the shoulder-joint treated in that way. The method was followed by an excellent surgeon who died in the last Afghan campaign—namely, Joshua Porter. By padding the shoulder the posterior drainage was not required. Mr. Barton was in accord with other surgeons respecting the glenoid cavity. Where it was interfered with the mortality was much greater than where it was unnecessary to operate. In one of his own cases success was due, to a considerable extent, to the excellent treatment of the patient by the house surgeon, Mr. Middleton.

Condylotomy with the Osteotome for Genu Valgum.

Mr. Swan read a paper on condylotomy by the osteotome for the treatment of knock-knee. He had practised Mr. Reeves' operation exclusively, but he had found it futile to avoid entering the joint. During the past four years he had operated on sixty-eight individuals, and 129 knees in all were operated upon. The ages ranged from nineteen to three and a half years. Nineteen had both knees operated on simultaneously. Suppuration occurred only twice, and all the cases recovered with useful limbs.

Mr. Hamilton had witnessed a good many of the operations, and considered the Section indebted to Mr. Swan for his record and its successful character. Like the peritoneum, the surgery of the knee-joint had during his time undergone a revolution. The simplicity of the operation, as done by Mr. Swan, was marvellous, and the results had been most satisfactory. It was a source of pride that Dublin was not behindhand in the great advance made by orthopædic surgery within the past few years.

Mr. Thomson congratulated Mr. Swan on his valuable contribution to orthopædic surgery. Having seen several of the cases, he could testify to the skill with which the operation had been done, and to its apparent simplicity. At first sight it seemed a harsh procedure to drive an instrument like a chisel into the knee-joint; because, though Reeves had the idea that he could introduce the instrument into the bone without penetrating the joint, leaving the covering of the cartilage to protect the joint from the instrument, there was no doubt in the majority of cases the joint was penetrated. But, whether in the majority or in the minority, it was extraordinary, judging from experience, that it could be done with almost absolute immunity. At the same time, he had himself performed M'Ewen's operation as simpler and safer. The shaft of the femur was practically divided, and there was no attempt to encroach on the cavity of the joint. Having regard to the results recorded by surgeons all over the world, M'Ewen's was taking the position of the operation for genu valgum. It was not, however, altogether free from danger. People had died from it as well as from Reeves'. In the division of the bone the popliteal artery was cut by the chisel, and amputation became necessary. However, Mr. Swan's paper was a revelation that a large amount of knee surgery was done in Dublin, and with a success that showed Mr. Swan had been too modest.

Dr. R. M'Donnell also congratulated Mr. Swan, many of whose cases he, too, had seen. The results were amazing, and such as a few years ago none could have believed. He had himself learned a severe lesson, having lost a patient from the simple operation of aspirating, though it was done with the greatest care, and with an instrument which had never been used before. The result of that case, which he published as a warning to others, made him timid in meddling with knee-joints. He had watched the development of knee surgery in Mr. Swan's hands, and it was perfectly amazing and gratifying to see, so that the hideous deformity of genu valgum would no longer remain without being remedied.

Mr. Barton concurred as to the value of the communication in proving that the surgery of the deformity in question was on a basis of security. But it would be a mistake to conclude that, because Mr. Swan was able to bring forward so many cases with such a happy result, therefore Reeves' method was *par excellence* the best. He regarded

M'Ewen's as superior to it, although he had not tried Reeves'. The results of M'Ewen's operation in fourteen or fifteen cases in which he had operated were exceedingly successful, as showing that it was free from danger, that recovery was rapid, and the condition of the limbs thoroughly satisfactory. Therefore, supposing Mr. Swan's sixty-eight cases to have resulted in perfectly straight limbs, if M'Ewen's could turn out limbs quite as good, it ought to be preferred, since the joint was not opened. Indeed, with proper precautions, M'Ewen's operation might be performed on both knees at the same time without risk of rise in temperature, or of suppuration.

Mr. Franks agreed with Messrs. Barton and Thomson that Reeves' operation was not as good as M'Ewen's. Reeves' operation went on the same lines as Ogston's, and it spoke volumes for M'Ewen's that, at the Copenhagen International Congress, Ogston himself confessed he had given up the operation, and thought M'Ewen's was far better. In the last case in which he had operated by M'Ewen's method for an exaggerated form of genu valgum, double on both sides, he operated on both at the same time, dressed with antiseptic precautions, and put the limbs into splints. For ten days there was no rise of temperature beyond two evenings at 99°; but about the tenth day it rose to 100° and 101°, the cause of which was that on one limb there happened to be a little pressure out of the region of the antiseptic dressings. The division of the femur two-thirds across, and then breaking it, did not raise the temperature. One dressing sufficed for perfect union.

Mr. Chance mentioned a case in Jervis-street Hospital of a man suffering from fracture of the patella, for which he wore a leather splint. The lace broke, and he left the apparatus at home. He fell on his way to hospital. The knee-joint opened. Excision was proposed, but he would not agree to any operation. The wound was dressed with lint and water, and he left the hospital in three weeks as well as he had been before the accident.

Mr. Wheeler considered it impossible to perform Reeves' operation without opening the joint.

The President pointed out that the operation performed by Dr. R. M'Donnell was for a joint already diseased, whereas Mr. Swan's operations were all in the case of healthy joints.

Mr. Swan replied.—Without expressing an opinion in favour of either operation, he was disposed to think that the freedom of the incision, the patulous condition of the osseous opening, and the easy escape of fluid, conduced to the immunity from risk. He used the spray as a concession to prejudice, but he had not used it in the last twenty or thirty cases. At the same time, he followed antiseptic surgery, and always dressed a case under the spray, thereby feeling confidence, and the method being useful in moistening the dressings.

PATHOLOGICAL SECTION.

President—A. W. Foot, M.D.
Sectional Secretary—P. S. Abraham, F.R.C.S.I.

Friday, March 13, 1885.

The President in the Chair.

Multiple Exostoses.

Professor Thornley Stoker read a paper on the pathology of multiple exostoses, and exhibited the bones of a skeleton affected by them to a remarkable degree. Most of the bones were engaged, and a great degree of symmetry existed between the outgrowths of opposite sides. The lower extremities presented the most pronounced deformities, and showed the two forms of exostoses which Professor Stoker stated to be more common than is generally supposed, and which he discovered in a great number of persons in whom no previous exciting cause could be traced—that is to say, a growth projecting upwards from the lower part of the internal condyloid ridge of the femur, and one projecting downwards from the internal tuberosity of the tibia. Although these deformities and kindred ones are often begotten of some inflammatory process, the result of injury, syphilis, rheumatism, or such like, he expressed his view that they frequently arise as a result of some hyperactivity in the bone-forming tissues, and without any inflammatory cause. He referred to the objection to any classification of bony growths which divided them into hyperplastic and heteroplastic, as they belong to the connective tissue group of structures, and are always truly hyperplastic, originating in the connective tissues even when found in situations and organs the most remote from normal bone. Attention was also drawn to the similarity which exostotic growths show to some of the conditions found in the healthy bones of lower animals, and, when occurring in tendons, to the osseous tendons of birds, and a suggestion was thrown out that such conditions give evidence that disease in many ways resembles a retrograde metamorphosis, and as such is interesting to the morphologist.

The President asked Professor Stoker in what condition did he find the cartilages? Were the larynx and bronchial and tracheal cartilages affected, and did the membranes of the interior of the skull show any tendency to bone deposit?

Professor Bennett said in the cases before the Section there was not a shadow of evidence in favour of any inflammatory process having been the cause of the ossification. Again, the ossification was not in

the muscles, but in their sheaths. On the other hand, ossifying myositis rather began by destroying the muscles and then producing ossification of the sheaths. He therefore objected to the term myositis ossificans as descriptive of such a skeleton, because it tacked on a theory not justified by the facts. These went to show that the disease was congenital and started in early life, and that the ossification proceeded in a manner the reverse of that which prevailed in true ossifying myositis, and was not inflammatory. In the skeleton described by Bookey, and preserved in the College Museum, and also in cases recorded by himself (Professor Bennett) and one or two others, the disease commenced in early life, and proceeded slowly along the muscles first, and implicated the bone afterwards. In the present case the disease began in the bone, and grew into the tendons afterwards.

Dr. Frazer said that many years ago he saw a case of this strange bony growth. It was that of a boy five or six years old, and there was hardly a bone in his body from which bony exostoses did not protrude, but there were no separate needles of bone to be detected in his muscles. One of his arms was smaller than the other, the malformation occurring at the elbow-joint. He (Dr. Frazer) had no doubt that the disease commenced in exceedingly early infancy, and was not progressive, for the boy was eight or ten years under his observation, and during that time there was not much increase in the ossification beyond what corresponded with the ordinary growth of the individual.

Mr. Abraham said cases of multiple exostoses were rather rare in museums. In Saint Bartholomew's Hospital Museum there is a specimen taken from a boy whose father was also afflicted with the disease. A section which he had made from one of Professor Stoker's specimens showed that the ossification came from the bone itself, and was not periosteal.

Professor Cunningham observed that an interesting point was the connexion between these pathological changes in bones and morphological changes. Professor Stoker seemed to assume that the changes were always of a degenerative kind. That might be the case in the majority of instances, but frequently they had instances of pathological changes helping the morphological alterations. A change in the habits of an animal sometimes rendered a ligament necessary in the place of a muscle, and then the latter underwent changes which converted it into a ligament. Such changes were distinctly pathological. During the present session in the dissecting-room of Trinity College a young male subject was met with which exhibited these changes on both sides of the body, and to a much greater extent than the specimen handed round, and both Professor Bennett and himself were inclined to think that it was due to some peculiar occupation which had been followed by the individual.

Mr. Foy observed that morphological changes produced by pathologi-

cal conditions could not always be considered as disadvantageous. The so-called degradation of tissue produced by pathological processes might serve a useful purpose, as was shown in some of the lower animals—a fact first clearly shown by Herbert Spencer in the second part of his work on Biology, published in 1865 and 1867. It was established in the well-known case of the turkey, where the muscle corresponding to one of the human adductors was usually found ossified. That those changes commenced early in life could not, he (Mr. Foy) thought, be questioned, as the period of selection in the protoplasm for minerals must have preceded its differentiation.

Professor Stoker, in reply, said the bronchial and tracheal cartilages were not affected in his specimen, nor were there any signs of ossification in the brain, and the membranes of the latter were not particularly adherent. The cartilages of the joints were singularly perfect, notwithstanding that there were so many changes in the neighbourhood of the joints. The os innominatum presented a good deal of bony change, like that which was seen in chronic rheumatic arthritis, but the acetabulum was very little changed. He agreed with Professor Bennett that there was no evidence that the condition in question was the result of inflammation; and he had used the name to which exception had been taken only until a better one was found. He believed that the ossifying process began in the connective tissue of the muscle, and proceeded from the muscle towards the bone, forming a secondary connexion with it. He did not think there was proof of the statement that myositis ossificans was usually congenital. In Dr. Bookey's case, the girl, who died at the age of twenty-six, was known to have been healthy up to the age of five, at which period the changes in her muscles began.

Oil Wart.

Mr. Story read a paper on "Oil Wart."

Tar Cancer.

Dr. Ball read a paper on cases of cutaneous epithelioma occurring amongst the operatives at a tar distillery. The first case came under notice four years ago, when Dr. Ball removed the front of the scrotum for an epithelioma, which had been preceded by a hard, horny wart. A recurrence took place at the side of the scrotum, not involving the operation cicatrix; this was extirpated two years ago, and since then the patient has remained well. The second case was that of an old man, about eighty years of age, who had an extensive epitheliomatous ulcer on the back of the left hand, which had originated in a wart five or six years previously. On the dorsum of the right hand, and for a distance of about two inches above the wrist, there were numerous hard, horny warts, and similar growths were present on the forehead

and nose, although none existed on the parts of the body covered by clothing. The forearm was amputated, but recurrence took place within a few months afterwards, the lymphatic vessels of the extremity being more obviously implicated than the glands. In addition to these two cases, Mr. Story had brought forward a case of epithelioma of the eyelid in a man who had been engaged at the same occupation. From inquiries made at the works, Dr. Ball learned that two others of the operatives had recently been somewhat similarly affected. One had an ulcerated wart on his nose, which had been destroyed by caustic, the cicatrix being still present, and another was stated to have had a large sore cut out of his face; but it was found impossible to trace this case, as none of his fellow-workmen knew what had become of him. The close resemblance between these cases and the soot cancer of Pott indicate that, like it, they owed their origin to long continued irritation; in fact, it is quite possible that the active chemical agent is identical in both instances. As there are but seventeen men employed in this industry in Dublin, it would appear that the proportion of cases of epithelioma occurring amongst them is very considerable; the numbers are, however, much too small upon which to base statistics. There are but three principal products manufactured at the works in question. First, a light liquid, which is called "naphtha oil," comes over from the stills; then a heavier fluid, called "creasote oil," which the manager kindly informed him contains on an average about 8 per cent. of phenol, and pitch is the residue of the process. The "creasote oil" is the most irritating of these products, and although, as stated, containing 8 per cent. of carbolic acid, the men wash their hands in it without hesitation. Dr. Ball had recently an opportunity of questioning a man who had been for a number of years engaged in one of the large carbolic acid manufactories in England. On this man's hands there were numerous warts, and he stated that such warts were not uncommon amongst the operatives, even those who only had to deal with the purest and most refined carbolic acid; but he had never known of any cases of cancer occurring amongst the work people.

The PRESIDENT observed that the last case showed that irritation of the skin was produced by the new industrial product mentioned. It would be worth inquiring into whether any difference was made by the use of wood or coal tar, and also whether the internal use of carbolic acid was dangerous. It was given in large quantities for many diseases; and they knew that the stomach was an organ which required very little provocation to generate epithelioma.

MR. ABRAHAM thought this affection probably resulted from the splashing of a strong acid or irritating substance. There was no evidence that it had ever been produced by the ordinary surgical strengths of carbolic acid. He had just hurriedly examined sections of Mr. Story's

oil wart, and was not quite satisfied that it was a real epithelioma. There was great hyperplasia of the epithelial cells, and large collections of the cell nests ; but these did not extend into the deep lying tissues. In the case of Dr. Ball's specimen the cells went deep into the tissues, and were also certainly epitheliomata.

Professor Stoker agreed with Mr. Abraham that these cancerous warts and growths would not result from any general influences connected with the manufacture, but were due to local irritation. When he himself used to be much occupied with demonstrations in the dissecting-room, and had his hands continually steeped in the juices of dead bodies, he used to suffer from ugly warts on both hands, some of which were as large as threepenny bits, and these used to disappear in summer when the occupation ceased, but returned with the renewal of it in the winter session.

Mr. Foy said it was doubtful that carbolic acid was really an acid at all.

Dr. Frazer said that in the palmy days of chimney-sweeps soot warts were very rare, and yet there was no doubt of the fact that a peculiar wart was produced by soot.

Mr. Story, in reply, expressed his opinion that the growth in the case of his specimen was an epithelioma.

Dr. Ball, in reply, said only coal tar was used at the works in which the man from whom his specimen was obtained had been employed. There was no doubt that the cancerous affection was due to local irritation, and not to any general effect produced by the acid. The solutions used, however, were very weak. The strongest contained only 8 per cent. of phenol, and he saw men washing their hands in the oil which came from the still without suffering any inconvenience.

On the motion of Mr. Story both specimens were sent to the Committee of Reference.

Professor Bennett read a paper on Complete Dislocation of the Elbow Outwards.

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P., F. R. Met. Soc.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, May 23, 1885.

Towns	Population in 1885	Births Registered	Deaths Registered			Deaths from Seven Zymotic Diseases							Deaths from Phthisis	Death-rate per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		From all causes	From seven Zymotics
Dublin,	353,082	819	868	145	193	–	60	16	3	17	20	13	110	32·1	4·8
Belfast,	219,222	619	650	109	63	–	150	7	2	12	9	5	119	38·7	11·1
Cork,	80,124	139	170	20	46	–	–	3	–	2	1	–	21	27·6	1·0
Limerick,	38,562	82	75	8	31	–	–	–	1	1	1	5	8	25·3	2·7
Derry,	29,162	62	54	9	6	–	–	4	–	–	1	–	6	24·1	2·2
Waterford,	22,457	44	39	7	11	–	6	–	–	–	1	3	3	22·6	5·8
Galway,	15,471	44	27	3	13	–	–	–	–	–	–	1	7	22·7	0·9
Newry,	14,808	32	20	2	5	–	–	–	–	–	1	–	3	17·6	0·9

Remarks.

In the eight selected towns included in the foregoing Table the highest death-rates are 38·7 per 1,000 of the population annually in Belfast, 32·1 in Dublin, 27·6 in Cork, and 25·3 in Limerick; the lowest rates are 17·6 in Newry, 22·6 in Waterford, 22·7 in Galway, and 24·1 in Derry. The rate of mortality from seven chief zymotics ranged from 11·1 per 1,000 per annum in Belfast, 5·8 in Waterford, 4·8 in Dublin, 2·7 in Limerick, 2·2 in Derry, and 1·0 in Cork to 0·9 in Galway and Newry.

The recorded deaths represent a rate per 1,000 of the population annually of 20·7 in twenty-eight large English towns (including London, in which the rate was 19·4), 30·8 in the sixteen chief towns of Ireland, 26·6 in Glasgow, and 18·1 in Edinburgh. There is a decided decrease (from 23·7 to 20·7) in the mortality in the English towns generally; and in London it has also fallen in proportion—from 22·4 to 19·4 per 1,000 per annum. It has also fallen in Glasgow (from 28·7 to 26·6), but it remained almost stationary and very low in Edinburgh (18·1 compared with 18·2). In the Irish towns the rate of mortality has risen slightly,

from 30·5 to 30·8. If the deaths (numbering 28) of persons admitted into public institutions from localities outside the Dublin Registration District are deducted, the death-rate of that district becomes 31·0, while that of the portion of the district included within the municipal boundary is 35·8. In London the epidemic of smallpox unhappily again shows a marked increase: the deaths were 239, compared with 179, 109, 197, and 229 in the four preceding periods of four weeks each. The weekly number of deaths from this disease since the beginning of the year have been 56, 42, 70, 58, 59, 60, 56, 44, 37, 27, 35, 23, 24, 39, 40, 49, 51, 48, 66, 75, and 50 respectively. The deaths from diarrhœal diseases in the same city, which numbered 51 and 52 in the two preceding periods of four weeks each, were 54.

Acute febrile zymotics were returned as the cause of death in 143 instances in the Dublin district, compared with a ten-years' average of 113·0 in the corresponding period and 125 in the previous four weeks. The 143 deaths included 60 from measles, 16 from scarlet fever, 20 from "fever," 17 from whooping-cough, 13 from diarrhœal diseases, and 3 from diphtheria. The epidemic of scarlet fever shows a marked recrudescence, the deaths being 7 more than in the four weeks ending April 25. Of the 20 deaths referred to "fever," 13 were ascribed to enteric fever and 6 to typhus, while in one instance the exact nature of the fever was either not specified or was ill-defined. The deaths from fever were one more than those registered (19) in the four weeks ending April 25. Four children aged between one and five years succumbed to scarlet fever. There is a large increase in the deaths from whooping-cough—from 5 in the previous four weeks to 17. Of the 17 victims of whooping-cough 15 were under five years of age, including 6 infants of less than twelve months old.

Measles caused as many as 150 deaths in Belfast, 60 in Dublin, and 6 in Waterford. In Waterford the epidemic of this disease again shows a considerable decline; in Dublin it is almost stationary, but in Belfast it has again become more destructive to life and is very widespread. Since the beginning of the year the weekly numbers of deaths in Dublin have been 3, 3, 3, 5, 3, 5, 10, 11, 8, 10, 11, 16, 12, 13, 19, 15, 15, 17, 12, 14, and 17 respectively. Of the 60 victims to the disease, whose deaths were registered in the four weeks, 43 were under 5 years of age, including 12 infants of less than twelve months. The outbreak is gradually subsiding in the North City Districts, in which only 7 out of the 60 deaths were registered. In the South City Districts, the deaths were 34 against 44, 22, and 3 in the previous three periods of four weeks each, showing a continued serious prevalence of the epidemic. In No. 1 South City District not less than 20 deaths were referred to measles.

Scarlet fever was fatal in 7 instances in Belfast, in 4 cases in Derry, and in 3 cases in Cork. Diarrhœal diseases were credited with only 27

deaths in the eight towns, compared with 32 in the previous four weeks. In London the weekly registered deaths from diarrhœal diseases were 16, 13, 9, and 16 respectively.

In the Dublin Registration District 819 births and 868 deaths were registered, compared with 728 births and 903 deaths in the previous four weeks. The births were those of 405 boys and 414 girls. The deaths of infants under one year were 145 against 148 in the previous four weeks; those of persons aged 60 years and upwards were 193, compared with 206 in the previous period.

The deaths referred to pulmonary consumption in the eight towns were 277, compared with 252, 270, 244, and 239 in the four preceding periods of four weeks each. In Dublin diseases of the respiratory organs are stated to have caused 177 deaths, against an average of 159·7 in the corresponding four weeks of the previous ten years, and compared with 207, 246, 225, and 213 in the four preceding periods of four weeks each. The 177 deaths included 97 from bronchitis (average = 102·6) and 48 from pneumonia (average = 34·5). The great mortality from pneumonia depended to a certain extent on the cold and searching weather experienced throughout the greater part of May. Of the 97 persons who succumbed to bronchitis, 19 were infants under twelve months, whereas 34 had passed their sixtieth year.

On Saturday, May 23, 1885, there were under treatment in the principal Dublin hospitals no cases of smallpox, 46 cases of measles, 28 of scarlet fever, 12 of typhus, 18 of enteric fever, and 11 of pneumonia.

The mean temperature of the four weeks was 47·1° in Dublin, 46·3° in Belfast, 48·2° at Roche's Point, Co. Cork, 45·3° at Glasgow, 45·6° at Edinburgh, and 48·6° at Greenwich. The minimal readings of the thermometer in the screen were 32·7° in Dublin, 33° at Belfast, 37° at Cork, 30·0° at Glasgow, 30·1° at Edinburgh, and 31·8° at Greenwich. The maximal temperatures were 58·7° in Dublin, 59° at Belfast, 57° at Cork, 59·5° at Glasgow, 59·6° at Edinburgh, and 67·7° at Greenwich.

The weather continued very cold during the greater part of the period, the maximal temperatures in all the towns falling far short of those registered in the preceding four weeks.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of May, 1885.

Mean Height of Barometer, - - -	29·779 inches.
Maximal Height of Barometer (on 11th, at 9 p.m.),	30·259 ,,
Minimal Height of Barometer (on 20th, at 3 30 p.m.),	29·167 ,,
Mean Dry-bulb Temperature, - - -	48·7°.
Mean Wet-bulb Temperature, - - -	44·9°.
Mean Dew-point Temperature, - - -	40·9°.

Mean Elastic Force (Tension) of Aqueous Vapour, -	·258 inch.
Mean Humidity, - - - - -	75·5 per cent.
Highest Temperature in Shade (on 28th), - -	64·5°.
Lowest Temperature in Shade (on 7th), - -	32·7°.
Lowest Temperature on Grass (Radiation) (on 7th),	28·9°.
Mean Amount of Cloud, - - - -	57·1 per cent.
Rainfall (on 23 days), - - - -	2·532 inches.
Greatest Daily Rainfall (on 19th), - -	·489 inch.
General Directions of Wind, - - -	W., N.W., S.W.

Remarks.

May, 1885, will be remembered as for the most part a cold, showery month. Up to the 24th there was a remarkable and persistent deficit of temperature, associated with a prevalence of "polar" winds—chiefly from N.W., and frequent hail showers. The coldness of the weather was probably due to the melting of snow and ice in Russia and the Baltic on the one hand, and on the other to the presence of vast ice-fields in the Atlantic as far south as Lat. 44°, and as far east as Long. 46°. The distribution of cold and warmth during the month was similar to that observed in April—first came a long cold period, and then a sudden change to warmer weather; but in May the maximal temperature recorded in the shade—64·5°—fell short of the maximum in April—66·1°—by 1·6°.

The mean height of the barometer was 29·779 inches, or 0·217 inch below the average value for May—namely, 29·996 inches. The mercury rose to 30·259 inches at 9 p.m. of the 11th, and sank to 29·167 inches at 3 30 p.m. of the 20th. The observed range of atmospherical pressure was, therefore, 1·092 inches—slightly less than an inch and one-tenth. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 48·7°; that calculated by Kaemtz's formula from the means of the daily maxima and minima was 47·4°, or 3·5° below the average mean temperature for May calculated in the same way, in the twenty years, 1865–84, inclusive (50·9°). It so happens that the past month was colder than any May for at least twenty years, but the mean temperature in 1869 (47·5°), and in 1879—the celebrated cold year—(47·6°), very closely approximated to that of the March-like May of 1885. The arithmetical mean of the maximal and minimal readings was 48·7°. On the 28th the thermometers in the screen rose to 64·5°—wind S.W.; on the 7th they fell to 32·7°—wind N.W. The minimum on the grass was 28·9° on the 7th. The rainfall was 2·532 inches, distributed over 23 days. The average rainfall for May in the twenty years, 1865–84, inclusive, was 1·938 inches, and the average number of rainy days was 15·1. Both rainfall and rainy days, accordingly, were very much above the average. Sleet fell on the 6th and

and powerful antipyretic in almost all diseases attended by high temperature, but it is not an antiperiodic. 2. It is especially useful in typhoid fever, pneumonia, and phthisis, producing the apyrexia of quinine, salicylic acid, and cold baths, without the concomitant unpleasant effects of the latter. 3. The reduction of temperature occurs rapidly, and persists for an average of twelve hours. 4. Its dose is double that of quinine. Three grains for a child under one year of age, seven grains under five years of age, and thirty grains for an adult form the usual maximal dose. Half the quantity may be given subsequently at intervals of one, two, or three hours, according to indications. Mingazzini in the *Gaz. Med. di Roma* (abstract in *The Medical Chronicle*, May) reports favourably on the antipyretic effects of the combined action of antipyrin and kairin. When successive doses of these drugs—commencing with antipyrin and followed by kairin—are given, a maximal depression is obtained, and the average duration of the depression is greater as compared with other modes of administering the drugs either singly or combined. This observer recommends that three grammes of antipyrin and two grammes of kairin should each be divided into two equal parts. The doses of antipyrin are to be first administered, then those of kairin at intervals of an hour and a half between every two of the four doses. Caution is necessary with very weak patients, and with typhoid patients when hæmorrhage threatens or is present. G. F. D.

ALCOHOLIC PARALYSIS.

The immediate and transient effects of an excessive quantity of alcohol upon the human nervous system, whether they are manifested in the form of drunkenness, or of delirium tremens, or of an acute attack of insanity, are well known. Scarcely less evident are the effects produced upon the nervous system by a less excessive, but a more prolonged abuse of alcoholic drinks. These effects may be manifested either in a general failure of physical and mental power, or in a form of disease closely resembling progressive paralytic dementia, or in various forms of chronic insanity, or in epilepsy, or in neuralgia, or in paralysis. In the acute form of alcoholic poisoning, no change in the structure of the nervous system has been found, except that the meninges in common with the internal organs and the mucous membranes are the seat of a very decided injection and of a slight exudation. In the chronic form of alcoholism, a number of pathological changes have been discovered in the nervous system, which, however, vary greatly in different cases. Of late years the paralysis which results from the abuse of alcohol has been accurately described by numerous observers, and the attempt has been made to discover the lesion of the nervous system, which is associated with this form of paralysis. Two cases which are reported by Dr. Henry Hun, of Albany, in *The American Journal of the Medical Sciences* for April, 1885, are typical examples of this

disease, and contribute to a better understanding of it. Dr. Hun has collected the recorded cases of alcoholic paralysis, and from their study he holds that we are justified in regarding it as a special form of disease with the following symptoms. After a number of cerebral and gastric disturbances due to the alcoholic poisoning the symptoms of the disease proper commence with neuralgic pains and paræsthesiæ in the legs, which gradually extend to the upper extremity, and which are accompanied at first by hyperæsthesia, later by anæsthesia, and in severe cases by retardation of the conduction of pain. Along with these symptoms appears a muscular weakness which steadily increases to an extreme degree of paralysis, and is accompanied by rapid atrophy and by great sensitiveness of the muscles to pressure and to passive motion. Both the sensory and the motor disturbances are symmetrically distributed and the paralysis attacks especially the extensor muscles. In addition to these motor and sensory symptoms there is also a decided degree of ataxia. The tendon reflexes are abolished, and vaso-motor symptoms, such as œdema, congestion, &c., are usually present. Symptoms of mental disturbance are always present in the form of loss of memory, and in transient delirium. The lesion is in all probability a degeneration of the peripheral nerve fibres and of the nerve cells in the cerebral cortex, together with a chronic congestion or inflammation of the pia mater. This lesion explains well the symptoms, although it is certainly curious that alcohol should not attack the spinal cord, but only the highest and lowest part of the nervous system, if one may so call the cortex of the brain and the terminal branches of the peripheral nerves.

TREATMENT OF INTESTINAL OBSTRUCTION.

ALTHOUGH laparotomy has come to be recognised as one of the justifiable measures in the treatment of intestinal obstruction, it is a resource which, on account of its radical character, will probably always be the last adopted. It is gratifying, therefore, to be able to add one more remedy to those already existing, which may, without any risk of harming the patient, possibly avert the necessity for so formidable an operation. Such a resource has been recently brought forward by Kussmaul and Cahn, in the *Berliner klin. Wochenschrift*, Nos. 42 and 43, 1884, and still more recently by Dr. C. Hasenclever, in a paper read before the Berlin Medical Society, and published in the same journal, No. 5, 1885. It consists in washing out the stomach. Hasenclever reports six cases, in all of which marked relief was afforded, and, although only two recovered, the autopsies in the remainder revealed other serious lesions which necessarily rendered any treatment futile. Cahn reports three cases from Kussmaul's clinic, of which two recovered. Still more recently, Dr. J. T. Whittaker read a paper on this subject before the Cincinnati Academy of Medicine, an abstract of which, together with the discussion which followed, is published

in the *Medical News* of April 4th. Two cases are referred to by Dr. Whittaker as occurring in his own practice, one by Dr. J. L. Cleveland, and another by Dr. William Judkins. The cases of Whittaker and Cleveland, although relieved, died, but that of Judkins recovered. It would seem also from Dr. Whittaker's paper that the primary suggestion of this treatment came, not from Germany, but from Cincinnati, and from Dr. Cleveland. As soon as the diagnosis of obstruction is made, the stomach should be washed out once or even twice a day. In this way often large quantities of fæcal matter, mucus, and gas, are removed, while the singultus and stercoraceous vomiting cease, and the patient experiences marked relief. Spontaneous fæcal evacuations also sometimes follow. The irrigation is practised until the patient is completely relieved, or the procedure is shown to be useless. The washing is continued until the fluid comes away clear. The rationale of this treatment cannot be definitely stated, but from the standpoint of relief to vomiting, its use is as much indicated as that of opium and ice, which, while they often relieve this symptom, nevertheless fail to remove the cause. Whether the vomiting be explained as the result of a reversed peristalsis, or be regarded as simply mechanical, the opium merely obtunds the excitability of the nervous system, and thus averts, for a time, the reflex act of vomiting, while the intestinal contents continue to accumulate. By the irrigation, one element of the trouble is at least removed—the distention of the stomach and upper part of the intestine, because, as was shown by Oser, in the *Wiener med. Blätter*, 1884, No. 41, the operation not only cleans out the stomach, but the small intestine as well; and this, too, as effectually, where there is insufficiency of the pylorus, as in acute and chronic intestinal obstruction. As to the curative action of this treatment, where there is no insuperable obstacle against the re-establishment of the natural evacuations, Kussmaul suggests the following explanation: 1. By removing the large accumulation of fluid in the intestine, more space in the abdomen is provided, and the enormous distension of certain parts at the expense of others is avoided. 2. The peristaltic movements of the intestine, above the point of obstruction, previously violent and irregular, become more quiet and regular. 3. It is only possible to remove a remediable obstruction, such as a bend or an invagination. Hasenclever suggests that the great distention of the stomach and intestine, in addition to the presence of unusually irritating contents, may produce strong irritation of the splanchnic fibres, and a consequent inhibition of peristalsis, with paralysis of the bowel. It frequently happens in ileus, that, succeeding a period of violent, painful peristaltic motion, there follows a long period of absolute rest, in which the activity of the intestine appears to be paralysed, and one can easily understand that after the removal of any irritating matters, the inhibition grows less, so that the forces regulating peristalsis again acquire the ascendency, and produce fæcal evacuations.

THE DUBLIN JOURNAL

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CONTENTS.

THIRD SERIES, No. CLXIV.—AUGUST 1, 1885.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. IV.—Notes of Visits to Contrexéville and Royat-les-Bains. By F. R. CRUISE, M.D., Univ. Dubl.; President of the King and Queen's College of Physicians in Ireland; Consulting Physician to the Mater Misericordiæ Hospital, Dublin, - - - 97

ART. V.—Puerperal Endocarditis with Hemiplegia after Delivery. By WILLIAM C. NEVILLE, M.A., M.D., Univ. Dubl.; Physician to Pitt-street Institution for Diseases of Women and Children; late Assistant Physician to the Coombe Hospital and Maternity, - 112

ART. VI.—Basic Aural Dyscrasia; being an Inquiry into a Condition of System disposing to Aural Disease, now for the first time described as the Basic Aural Dyscrasia, involving an Explanation of the Mode of Causation of Tinnitus Aurium, and a Description of a hitherto unnoticed Form of Deafness—Vascular Deafness. By ROBERT T. COOPER, M.A., M.D., Univ. Dubl., London—(*concluded*), 120

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. Insanity and Allied Neuroses: a Practical and Clinical Manual. By GEORGE H. SAVAGE, M.D., - - - - - - 134

2. On the Nature and Treatment of Sporadic and Epidemic Cholera. By ALEXANDER HARKIN, M.D., F.R.C.S., - - - 140

3. Therapeutische Notizen der Deutschen Medizinal Zeitung, 1880–83. By DR. J. GROSSER, - - - - - - - 140

4. Illustrations of Clinical Surgery. By JONATHAN HUTCHINSON, F.R.S., Consulting Surgeon to the London Hospital, - - 140

5. Surgical Operations. Part I. The Ligature of Arteries. By SIR WILLIAM MACCORMAC, Surgeon, and Lecturer on Surgery, St. Thomas's Hospital, - - - - - - - 141

6. Journal of Cutaneous and Venereal Diseases. Edited by DRS. H. G. PIFFARD and P. A. MORROW, - - - - - - 142

7. Materia Medica, Physiological and Applied. Vol. I., - - 142

Part III.—HALF-YEARLY REPORTS.

PAGE

Report on Nervous and Mental Disease. By Ringrose Atkins, M.A., M.D.; Resident Medical Superintendent, District Lunatic Asylum, Waterford:—

1. Insanity in General, - - - - - - 143
2. Anatomy and Physiology of the Nervous System, - - 147

Part IV.—MEDICAL MISCELLANY.

Academy of Medicine in Ireland:—

SUB-SECTION OF STATE MEDICINE.

On the Results of the Application of the Laws relating to the Adulteration of Food and Drugs in Dublin. By Dr. C. A. Cameron, - - - - - - - - 155

PATHOLOGICAL SECTION.

Renal Sarcoma. By Professor Walter Smith, - - 159
Dissecting Aneurysm of Shekleton. By Dr. Magee Finny, - 159
Sublingual Epithelioma. By Mr. Kendal Franks, - - 163
Suicidal Wound in the Throat. By Professor Stokes, - - 165

SURGICAL SECTION.

Surgery of the Knee-joint. By Mr. J. K. Barton, - - 166
Urari in the Treatment of Tetanus. By Mr. M'Ardle, - - 170

Sanitary and Meteorological Notes. Compiled by J. W. Moore, M.D., F.K.Q.C.P., F.R.Met. Soc.:—

Vital Statistics of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, June 20, 1885, - - - 171
Meteorology—Abstract of Observations made at Dublin for Month of June, 1885, - - - - - - - - 174

Periscope:—

The Chin Reflex—a New Clinical Observation, - - - 154
Treatment of Tendon Ganglion, - - - - - 170
Artificial Fluid Tympanic Membrane: a New Mode of Treatment of Chronic Otorrhœa, - - - - - - 176
Fracture of the Olecranon, - - - - - 176

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

AUGUST 1, 1885.

PART I.

ORIGINAL COMMUNICATIONS.

ART. IV.—*Notes of Visits to Contrexéville and Royat-les-Bains.*[a] By F. R. CRUISE, M.D., Univ. Dubl.; President of the King and Queen's College of Physicians in Ireland; Consulting Physician to the Mater Misericordiæ Hospital, Dublin.

IT is well known to all physicians of experience that one of the most powerful agents we possess in the treatment of many chronic ailments is the use of mineral waters, especially when taken at their sources. However, if it be needful to prescribe the most efficacious drugs for each case we meet, it is no less important to select for each of our patients the mineral water best suited for his disease.

To do this requires a somewhat special training and experience, not easily attainable. It is most important, both for patient and physician, that no mistake should be made in the choice, as a visit to a thermal station is not infrequently a very laborious and a very expensive undertaking.

For these reasons I venture to make the present communication to the Academy of Medicine in Ireland, in the hope of giving to others some information, derived from personal experience, of two celebrated French watering-places—namely, Contrexéville and Royat-les-Bains.

A brief history of the circumstances which led to my visiting Contrexéville in the year 1877, may add to the interest of the subject, and therefore I will relate it.

[a] Read in the Medical Section of the Academy of Medicine in Ireland, May 29, 1885.

Just fourteen years ago Sir George Porter and I attended a young lady (Miss M.) who suffered severely from chronic cystitis. The origin of the disease was obscure, but, from our knowledge of the patient's constitution, we inclined to the belief that a strumous diathesis was to blame. I regret to add that we failed to cure her.

After some time Miss M.'s mother took her abroad, and while in Paris, consulted the late Dr. Acosta about her case. Dr. Acosta recommended a visit to Contrexéville, and a course of the waters and baths there. His advice was followed, and the result was a perfect cure.

I need hardly say that this rapid cure of so obstinate a disease, by a visit to a mineral water of which we had never even heard, made a very strong impression upon Sir George Porter and on me, and we resolved to profit by the experience.

Before adverting to the many cases in which we advised a visit to Contrexéville, I may here record the fate of Miss M.:—

A few years subsequent to her cure of cystitis, she died suddenly. I learned that her death was preceded by very violent headaches. Although neither Sir George Porter nor I had attended Miss M. during the fatal illness, the family wished us to be present at the *post mortem* examination, which was deemed advisable on account of her sudden and unexplained death. The examination showed that the cause of death was a large effusion of blood at the base of the brain. The membranes and adjacent cerebral substance were found extensively infiltrated with tubercular deposits.

Sir George Porter and I felt anxious to ascertain the condition of the bladder, which had formerly been so much affected, and accordingly we examined it. As a result we found that organ and all its appendages, kidneys included, *perfectly healthy.*

Shortly after our favourable experience of the effects of Contrexéville in Miss M.'s case, Mr. C., an elderly gentleman of high position in the legal world, came under Sir George Porter's and my care. His case was one of chronic cystitis, the result of stricture and prostatic disease. The dilatation of the stricture gave but little relief to the cystitis and accompanying sufferings, so we advised him to go to Contrexéville. He went there two summers consecutively. His case, as you will understand, was not a hopeful one for cure, but he derived very marked relief, and his life was evidently prolonged considerably.

The next case I shall allude to was that of a distinguished ecclesiastic, the President of one of the Provincial Colleges of Ireland,

who suffered intensely from renal colic, caused by oxalate of lime gravel. His cure, accomplished by one visit of three weeks (in 1877), was complete and permanent.

A similar case, in the person of a well-known and much respected Dublin merchant, occurred (in 1883) within my own experience.

In the summer of 1882, Dr. James Little asked me to see a medical confrère (Dr. L.), who was quite broken down by chronic pyelitis. We decided to send him to Contrexéville, where he derived much relief, and, finding this cold, damp climate unendurable, he emigrated to Australia, whence he sends me good accounts of his health and progress.

I shall not occupy your time by relating details of cases, preferring to state, in brief, that since I have known of Contrexéville I have either sent there, or treated here with the imported waters, most of the obstinate cases of irritable bladder, or cystitis, which have come into my hands; and that all have derived benefit, and the more hopeful quite a satisfactory result. It so happens that my endoscopic studies have brought under my care a large proportion of cases of urinary disease, so that my experience has been somewhat extensive.

When first I learned the therapeutical value of Contrexéville, I sought in various directions for information concerning it, and encountered much difficulty in my research. Although so celebrated in France and on the Continent, this watering-place appeared unknown in England, and with the exception of the brief notice of it in the French Manual on Mineral Waters by Dr. Constantine James, of Paris, I could obtain no details. At last, one of the patients whom I had sent thither brought me two essays on the subject—one by the late Dr. Victor Baud, who had practised there for a quarter of a century, and another, more brief, by Dr. Tamin-Despalles, who was then in practice at these waters. More recently I have found an essay on the subject by Dr. Debout D'Estrées, the Government Inspector of the station, which, on the whole, is the most satisfactory I know of.[a]

Wishing much to see Contrexéville, and urged to do so by Sir George Porter, I took an opportunity while at leisure in Paris, in the autumn of 1877, to run down there and make a personal visit.

Taking the night mail from Paris, by the Chemin de Fer de L'Est, I reached Neufchâteau, in the Vosges district, about six o'clock in

[a] This Guide Book can now be had, in English, from Messrs. Churchill, of New Burlington-street, London.

the morning. Having breakfasted, I hired a voiture and drove to Contrexéville, a lovely drive of about fifteen miles, through a pretty mountainous country, not unlike our own county Wicklow.

I may observe here that now-a-days the train from Paris goes straight through to Contrexéville, making the journey shorter and easier than formerly.

On my arrival I was most hospitably received by Dr. Tamin-Despalles, who showed me all that was to be seen, and explained the uses and effects of the waters. I regret much to say that this experienced practitioner has since died, after a long attack of brain disease. His place is ably filled by several other physicians of eminence, amongst whom I may specially mention Dr. Debout D'Estrées, who has treated several patients I sent to him with judgment and success. I had the pleasure of making his personal acquaintance in the year 1883. To show how little was known of Contrexéville, except on the Continent, I may mention that Dr. Tamin-Despalles told me, in 1877, that so far as his knowledge went, and it extended over a long term of years, I was the first English-speaking physician who had ever visited it. Since that time it has come under marked notice, and has been visited by many of our Irish, English, and American confrères; however, as I have not seen any account of their visits, in our language, I think a brief note of my experiences may interest the members of the Academy of Medicine in Ireland.

I found Contrexéville a pretty little town, or rather village, made up, for the most part, by the hotels and boarding houses which accommodate the great influx of patients, who come to it for the season, from May until about the 15th of September. In former days it belonged to the kingdom of Lorraine, but now it is in the department of the Vosges.

Situated on the river Vair, in a valley open from north to south, it is placed at a height of over a thousand feet above the sea level. Its situation explains the sudden changes of temperature to which it is subject, especially in the morning and evening. This fact must be borne in mind by visitors, who should always be provided with woollen garments, even in the height of summer.

Though the waters of Contrexéville have been locally celebrated time out of mind, they were only made known to the medical world in 1760, by a Report read before the Society of Science and Arts of Nancy, by Dr. Bagard, Physician to Stanislaus, King of Lorraine.

I shall read a short extract from this quaint Report, which will show that even at that distant time Contrexéville was resorted to by patients suffering from gravel, bladder diseases, gout, and liver complaints:—

"The mineral waters of Contrexéville are a sovereign remedy in diseases of the kidneys, of the ureter, of the bladder and the urethra, stone, gravel, glair, suppuration. We can assert that these waters are efficacious against the stone, which they loosen and drive out of the bladder, when the stone is not of a considerable size; that they dissolve and break larger stones, when the latter are chalky. We keep a list of patients of all ages who, during several years, have got rid of a stone through the effect of these waters.

"They prevent fresh attacks of gout by restoring the suppleness of the nerves, and of the membranous parts which the disease has dried up.

"As these waters contain ferruginous matter, a mineral acid and soap, they will be very useful in cases where the bile becomes too thick, and where the liver is obstructed—the more so as they are purgative."

Dating from the time of Dr. Bagard's Report we find the celebrity of Contrexéville steadily growing. Analysis upon analysis has been made of the waters—the Government has taken the station under its protection. Capitalists have expended large sums in making the place attractive to visitors, and year by year the number of these visitors has increased, so that now, owing to the crowds, it is necessary to secure accommodation in advance before venturing to undertake the journey. The accommodation at present is quite first-rate. There are capital hotels and boarding-houses to suit various means; also a well-regulated Établisssement for baths, douches, &c., a very pretty park, with suitable amusements, Casino, theatre, covered promenades, music, reading-rooms, &c.

It is right to add that travellers who seek amusement alone are likely to be disappointed. The place is remote and somewhat dull, the patients who go there are not young or lively; but the cures are numerous and remarkable, and the patients generally are very well satisfied.

I was greatly struck in observing the wisdom of the French Executive, which, like all other Continental Governments, takes under its guardianship all places possessing mineral waters of value, developing their utility, and doing full justice to their virtues and capabilities—a contrast very humiliating to anyone familiar with the

neglect exhibited by our Government towards places similarly gifted in Great Britain and Ireland.

Contrexéville is prettily situated in the heart of the Vosges mountains, surrounded by agreeable walks and drives, and within easy reach of many interesting places. Amongst others I may mention Domrémy, the birthplace of Joan of Arc; Mirecourt, a flourishing town, celebrated for the manufacture of musical instruments; Neufchâteau, the valleys of Viviers and Bonneval, the baths of Plombières, and similar places of interest. Trips to these various resorts pleasantly fill in the leisure hours of the patients staying at Contrexéville.

As already mentioned, I visited the different springs, and ascertained their properties.

Four principal springs are used, which I name in the order of their importance, namely:—

The Pavilion;
The Prince;
The Quay;
The Sovereign.

A fifth, named "Le Cler," is also used, and its water exported, but it is weak compared with the Pavilion. All these springs are cold.

The Pavilion may be taken as the typical and most important water. I give here a table, showing the result of M. Debray's analysis:—

ANALYSIS OF THE PAVILION WATER.

Free Carbonic Acid - - - -	0·080[a]
Bicarbonate of Lime - - - -	0·402
„ Magnesia - - -	0·035
„ Iron - - - -	0·007
„ Lithium - - -	0·004
Sulphate of Lime - - - -	1·165
„ Soda - - - -	0·236
„ Magnesia - - - -	0·030
Silica - - - - - -	0·015
Chloride of Potassium - - -	0·006
„ Sodium - - - -	0·004
Fluoride of Calcium - - - -	traces
Arsenic - - - - -	traces
	2·384

[a] Grammes per litre.

While we may take the Pavilion water as the most important and typical in its composition and effects, it is right to observe that the other springs are similar, on the whole, with some variations.

Thus, the Prince is richer in iron, and hence of great repute in the treatment of anæmia and diseases of females. According to Dr. Victor Baud it is specially efficacious in functional sterility.

The Quay spring contains more magnesia, and is particularly suited to the gouty.

The Sovereign is much weaker than the others, and contains no iron, or, at all events, none worth notice.

The "Le Cler" resembles the Pavilion, but is weaker. I draw attention to this fact as it is now imported, but it is by no means as efficacious as the Pavilion.

It is very important to observe that these waters bear carriage well, the only difference observable in the analysis made at the springs, and after importation, is that the latter show a certain falling off in strength.

My friend, Dr. Tichborne, who has lately brought out an important work on Mineral Waters, in conjunction with Dr. Prosser James, of London, was kind enough, two years ago, to place in my hands the results of his analysis of the imported waters of Contrexéville. According to his researches the solid constituents of the imported water amount to 166·7 grains per gallon, as against 229·5 found in the water fresh from the spring. The "Le Cler" water shows only 149 grains per gallon.

It will be seen from the foregoing analysis that the spring belongs to the class of calcareo-sulphated waters; that it is alkaline, with a preponderance of salts of lime; that it contains aperient salines in the form of sulphates of soda and magnesia, also iron and arsenic, and traces of fluoride of calcium. It holds, moreover, sufficient free carbonic acid to make it bright and pleasant to the taste, when fresh from the source, thus masking its somewhat inky flavour.

Its effects, when used internally, may be anticipated. It is—

1st—Diuretic.
2nd—Laxative.
3rd—Tonic.

When taken in suitable doses it purges gently, improves the appetite, stimulates the circulation and skin, promotes the flow of bile, and *especially* it increases the urinary secretion in a very remarkable manner.

It is upon the urinary organs that the water of Contrexéville exercises the most powerful effect. It acts rapidly, producing a diuresis far in excess of the quantity of fluid ingested; it dissolves the mucus met with in the passages, and loosens and carries out small concretions.

It has been observed to subdue quickly excessive acidity of the urine, clearing it remarkably of deposits, and, strange to say, in certain cases it is found to restore alkaline urine to its normal acidity. This seemingly paradoxical effect is due to its efficacy in curing morbid conditions of the urinary mucous membranes, which so often lead to ammoniacal decomposition, and consequent alkalinity of the urine.

Its effects in cases of gravel and stone are remarkable. When the calculi are small, they are frequently washed out bodily by the diuresis. When large and soft, they are disintegrated and broken up to such an extent that some actual cures have been recorded; but the more common effect of Contrexéville water on large calculi is to strip them of mucous and phosphatic coatings, thus exposing the central calculus in its rough outline, and increasing the calculous symptoms.

In this way the waters act as a valuable test, quickly revealing the presence of the stone, and compelling the patient to seek surgical aid, and waste no time in hesitancy, the too frequent result of procrastination, due to the fluctuation of symptoms.

In cystitis, whether essential or symptomatic, the waters of Contrexéville are useful beyond all controversy, often curing the former, and mostly alleviating the latter cases, even when all other remedies have failed.

I can speak with confidence on this subject, from an experience extending over fully fourteen years.

The highest Continental authorities are agreed upon the therapeutic value of Contrexéville waters in urinary diseases. As I stated before, my knowledge of their utility arose from Dr. Acosta, of Paris, sending thither a case which had long resisted other treatment, and both the late Dr. Civiale, a specialist of European fame and historical celebrity, and Dr. Durand-Fardel, another specialist on the subject of mineral waters, speak in the highest praise of them. Dr. Civiale particularly advised their use in cases of atony of the bladder, arising from long-standing stricture, cystitis, and following the operation of lithotrity.

The *essential* difference observable between the Contrexéville

waters and those of other alkaline sources, such as Vichy, Vals, and so forth, is that they are *tonic*, and thus, while beneficial to the local ailments, are, at the same time, restorative of the general health and strength. Such a combination of virtues cannot, by any means, be affirmed regarding many other alkaline waters.

Besides their internal administration, the waters of Contrexéville are also used externally, in baths, douches, &c.

I have some doubts of their possessing any very powerful effect when applied to the skin, except perhaps as a stimulant in douches, and thus an adjuvant to their internal exhibition; all the more so, as I observed at the time of my visit that the waters, when heated, freely deposit the solid ingredients, lining the boilers with thick incrustations.

Although my principal object in reading this paper to-night is to explain the value of the waters of Contrexéville in diseases of the urinary organs, I would ask permission to notice briefly their utility in some other ailments.

First—In gout these waters will be found most serviceable, especially in the chronic or atonic forms. This might be anticipated from their usefulness in calculous disorders, which are largely due to gout. In them we find properties at once *diuretic*, *laxative*, and *tonic*, fulfilling the most important indications for treatment. Moreover, being moderate in the degree of their mineralisation, they are much safer, especially for the weakly, than the waters of Vichy, Vals, Carlsbad, and other more powerful alkaline spas, which suit best for the plethoric. Trousseau, as also Charcot, dwells on this point in favour of Contrexéville.

Another class of cases in which these waters are found particularly useful are those in which the liver is congested and inactive from one cause or other, and the bile inspissated and tending to the deposition of concretions or gall-stones. Numbers of patients thus affected are sent by the French physicians to this station, and obtain remarkably favourable results. This, as in the case of gout, is just what we might expect from the composition and effects of the waters.

Another ailment in which Contrexéville waters are used with advantage is nocturnal incontinency of urine in children. I can speak decisively on this point from my own experience. I believe that in such cases the action of the water is twofold. In the first place, it corrects irritating conditions of the urine; and secondly, it restores tone to the organs. Whether this is the correct explana-

tion or not, of one thing I am certain—that the use of the Pavilion water, as a diet drink, has cured a number of very obstinate cases.

Another disease in which Contrexéville water has been found very serviceable is diabetes. I do not mean to affirm that it will accomplish the cure of confirmed cases of diabetes with progressive wasting, but certainly in the group of patients who are gouty, and more or less diabetic, it materially reduces the glycosuria, and proves a useful adjunct to a regulated dietary. In this effect it closely resembles the famous American mineral water, the *Bethesda*.

To recapitulate:

The waters of Contrexéville are—

Mildly alkaline, especially from lime salts.

Saline, from sulphates of soda and magnesia.

Tonic, being ferruginous and arsenical, with traces of fluoride of calcium.

The diseases in which they prove useful are—

Chronic affections of the urinary organs, especially when complicated by gravel, renal or vesical.

Gout, especially its atonic forms, these waters being tonic, and thus markedly contrasting with many other alkaline waters.

Disease of the liver, especially those complicated by gall-stones.

Nocturnal enuresis in children.

Diabetes, especially when associated with gout.

Let me add a word as to the use of the imported waters of Contrexéville.

I advise the Pavilion spring, and none other. Of this I give half a bottle daily as a diet drink, either with milk, wine or spirit, as otherwise indicated. Watching the effect I increase the quantity up to a whole bottle, but have not exceeded that amount.

As to the method of using these waters at the springs, I do not touch the subject. Taken fresh, they are far too powerful to be used without the regular supervision of a physician familiar with their employment. Under such direction I believe they will be found an invaluable adjunct to the resources of the practical physician and surgeon.

Allow me, before concluding, to add some notes of a visit which I paid to Royat-les-Bains, in June, 1884, and of the circumstances which brought me there:—

One day, in the spring of last year, I happened to complain to my friend and colleague, Dr. Patrick Hayes, about the great annoy-

ance I had suffered from eczema. This affection, presumed from many special symptoms to be of a gouty nature, had been treated in various ways, but with very partial success. Dr. Hayes told me that a patient of his, very similarly affected, had been sent by a London physician to Royat-les-Bains, and had been effectually cured.

A few inquiries satisfied me that this mineral watering-place enjoyed a well-merited celebrity in the treatment of chronic forms of gout, and I felt that it was well worth my while to pay it a visit. Accordingly, to Royat I went, in June, 1884, and, to make a long story short, I was cured so completely that with a little attention to diet, and some other hygienic details, I have escaped ever since all annoyance from my troublesome ailment.

It is but truthful to add that I have kept up the use of the waters, and observed the rules of life laid down for me. Many patients who are careless about these matters blame, very unjustly, the remedy which they unreasonably expect will cure them despite of themselves.

Anyone who has undergone for years the indescribable worry of eczema, will understand that I naturally feel very grateful to Royat, and am anxious to make known to the members of the Academy of Medicine in Ireland some details concerning it:—

Leaving Paris by the Lyons Railway Station, a journey of some nine hours brought me to Clermont-Ferrand, the wealthy capital of the Auvergne district, and in ten minutes more I arrived at the picturesque village of Royat-les-Bains, one of the most celebrated mineral stations of France. Once settled in my hotel (Chabassière's), which, it is but just to say, combined every comfort with moderate charges, I sought the advice of Doctor Alexandre Petit, whose *brochure* on Royat I had already studied. Under his guidance I commenced the course, which lasted three weeks.

The routine was much as follows:—At 7 a.m. I took a glass of the Eugenie water, hot from the spring, then a reclining bath in the same water, at a temperature of 95° F. After the bath I had another glass of the water. Then I returned to my hotel, and had coffee and strawberries. At one o'clock déjeuner à la fourchette. At 4 to 5 p.m. two glasses of the St. Mart spring, with fifteen minutes between. At 6 o'clock dinner.

Thus I passed the days, spending the leisure intervals in exploring Royat and its environs, and in observing the use and effect of the waters. Day by day I improved in health and spirits—the eczema

cleared off, and no new spots appeared. As already stated, I have remained well, now just a year.

Royat-les-Bains is a village, consisting mainly of the Établissement for the waters and baths, the hotels, boarding-houses and villas, which accommodate the visitors in the season, from May till the end of September.

It is beautifully situated in the Auvergne mountains, about 1,500 feet above the sea level, in a valley stretching from the base of the Puy-de-Dôme to Clermont-Ferrand, and following the course of a torrent of lava, which, at some remote age, poured down from the neighbouring volcanoes, now completely extinct. The lowest portion of this valley conveys the Tiretaine, a mountain stream of some considerable size.

All that a lovely country, an agreeable bracing climate, a wealth of interest, historical, geological, and botanical, combined with health-giving waters, can offer to satisfy the visitor, will be found in plenty at Royat-les-Bains. To those who love mountain scenery, as I do, no day spent there can feel irksome or tedious.

It is right to add that it is a very quiet spot, to which the world of fashion has not yet penetrated; but its fame is of old-standing, it is thoroughly appreciated by the medical faculty and people of France, and yearly becomes better known to the world at large.

To prevent confusion about names, let me observe that Royat, the original village, is situated about fifteen minutes' walk higher up in the valley than Royat-les-Bains, and, though most interesting to visit, is not the mineral station known as Royat.

The original village is evidently of great antiquity, resembling a miniature old Roman town. The photographs which I exhibit, many of which I took myself on the spot, show the curious old streets in which it abounds, and the castellated and battlemented church, a Romano-Byzantine edifice, dating from the twelfth century.

There are clear evidences that the ancient Romans knew Royat well, and used its hot springs, both for separate baths, and for the piscine or general swimming tank. Just below the railway bridge may be seen the remains of Roman baths and piscine, close to the St. Mart spring, which were discovered in 1843. These are some of the many ruins which prove the Roman occupation of Royat in ancient times.

The entire neighbourhood of this station abounds in interesting

places, which serve to occupy the leisure hours of visitors to the waters.

Clermont-Ferrand, to which I have already alluded, is a little over a mile from Royat, and may be reached by omnibus in about ten minutes. Expeditions are made thither almost daily, and I know no more agreeable stroll than to wander through its beautiful Gothic Cathedral, and then walk down to the Place Pascal, in which we find the statue of the great philosopher, so placed as to look to the distant towering Puy-de-Dôme, upon the heights of which he performed the experiments which led to such advance in barometric science.

Selecting a clear day, a journey of some two and a half hours brings to the summit of the Puy, with its ruined Temple of Mercury, now replaced by an Observatory, from which a magnificent view of the surrounding country stretches out on all sides.

In every direction about Royat we find beautiful mountain passes, to ride, drive, or walk; picturesque old towns and villages, and ruins of ancient castles and chateaux. Not a day of the whole course of three weeks need pass without a pleasant excursion, amid scenery lovely enough to please every eye, and monuments of the old feudal times, like Tournoël, grim and gaunt enough to make one rejoice that we do not live in such wicked and awful days of savagery. I shall not attempt to enumerate the various points of interest around Royat, as the local guide-books offer all needful information, and I only allude to them here to illustrate the attractiveness of the place. As a matter of course, all the usual recreations of watering-places are found at Royat—a pretty terraced park, reading-rooms, Casino, theatre, music, and so forth.

Let us now see what the waters of Royat are—what is their nature—and in what diseases they may be used with benefit.

There are four springs, which much resemble each other, though differing in certain details,[a] as follows:—

The Eugenie.
The Cæsar.
The St. Mart.
The St. Victor.

Taking the Eugenie spring, as the one both typical and most important, let us examine its constitution. I append M. Lefort's analysis:—

[a] It is important to know that these waters bear carriage remarkably well, and suffer little loss in the process.

ANALYSIS OF ROYAT WATER.

Eugenie Spring—(Temperature 95° F.).

Bicarbonate of Soda	1·349[a]
„ Potash	0·435
„ Lime	1·000
„ Magnesia	0·677
„ Iron	0·040
„ Manganese	traces
Sulphate of Soda	0·185
Phosphate of Soda	0·018
Arseniate of Soda	0·004
Chloride of Sodium	1·728
Iodide and Bromide of Sodium	traces
Silica	0·156
Alumina and Organic Matters	traces
Chloride of Lithium	0·037
Total Solids	5·623
Free Carbonic Acid	0·377

From the foregoing table it will be seen that this spring belongs to the class of alkaline-chlorinated waters, with the addition of salts of lithium, iron, and arsenic.

The effects of the water, when used internally, may be surmised from its composition. It is—

Stimulating to the circulation,
Diuretic,
Laxative, and
Tonic,

The diuretic effect is the most manifest, often doubling the quantity of urine excreted, and at the same time raising the specific gravity one-third or more. In its diuretic properties I observed a strong similarity to our own mild sulphur water at Lisdoonvarna, which, although quite different chemically, is famous also for the cure of gouty and cutaneous affections.

The laxative effect of the Eugenie water is mild, but unmistakable, the sulphate of soda mainly accomplishing this end.

The tonic properties, due to iron and arsenic, are very pronounced, and, together with the chlorides, serve to mark the difference between Royat and the stronger and more purely alkaline springs, such as Vichy, Vals, Pongues, and others, indi-

[a] Grammes per litre.

cating, moreover, their greater suitability for lymphatic and debilitated patients—in fact, for strumous subjects, no waters, excepting alone those of La Bourboule, which is quite near, enjoy an equal reputation. At some future time I hope to bring La Bourboule under your notice.

As already stated, the four springs of Royat, although resembling each other, differ in certain points.

Thus, we have seen the composition and effects of the Eugenie spring.

The Cæsar is the least mineralised of all these waters, but is very agreeable and piquant in flavour, and is found very useful in dyspepsia. It stimulates the mucous membrane of the stomach, improves the appetite, helps digestion, and increases the flow of bile and urine.

The St. Mart water contains a considerable quantity of chloride of lithium, and is particularly suited for gout and rheumatism, and all allied affections.

The St. Victor spring is the richest in iron, and is specially useful for anæmia, diseases of females, and for the weak and debilitated.

All these springs are used, according to the necessities of the cases, in three different ways—1st. Internally; 2nd. Externally—as baths, reclining or swimming (piscine), and douches; 3rd. By inhalation, while in a state of pulverisation, or minute division.

It is easy to see that with such a repertory of potent agents as these various waters afford, a judicious physician wields immense therapeutical power.

I shall now briefly enumerate the principal diseases in which they may be used with advantage. These may be divided, for practical purposes, into three great classes:—

1st.—*All forms of gout and rheumatism*, especially the atonic phases.

It is almost needless to say that a mild alkaline water, modified by chloride of lithium and ferro-arsenical salts, is certain to benefit this class of ailments, and accordingly we find them improving from day to day at Royat, including gouty and rheumatic affections of joints, muscles, fasciæ, nerves, skin, especially eczema, gouty dyspepsia, gastralgia, asthma, and so forth.

2nd.—*Anæmic and lymphatic affections.*

The combination of chloro-alkaline waters with iron and arsenic improves the appetite and digestion, and speedily reconstructs the blood in anæmia. It is found very useful also in atonic dyspepsia,

and in all the nervous troubles appertaining thereto. For insomnia, Royat enjoys a special and most favourable reputation.

3rd.—*Affections of the throat, lungs, and uterus.*

The utility of the waters of Royat in this third class of ailments is what we might expect from the strong similarity between them and the waters of Ems—Royat being, in fact, the French counterpart of Ems, enjoying, however, the great advantage over the latter of a climate both bracing and tonic, in place of relaxing and debilitating.

Accordingly, we find chronic affections of the larynx and pharynx, bronchial catarrh, asthma, and even the earlier stages of pulmonary phthisis, improving at Royat, and the crowds which frequent the inhaling rooms give proof of the beneficial results felt by all who resort to this form of medication.

Chronic affections of the uterus are likewise found to derive immense service from these waters.

For myself, I am strongly disposed to believe that the efficacy of the waters of Royat is greatly augmented by the climate, which is, like all mountain air, revivifying in a marked degree. It is, moreover, temperate and dry, and its salubrity is proved by the abundance of fruit and flowers for which the whole district is celebrated.

I shall not dilate further upon the virtues of Royat, trusting that I have already given a sufficiently clear outline to enable my readers to select the cases best suited for the use of its waters.

ART. V.—*Puerperal Endocarditis with Hemiplegia after Delivery.*[a]

By WM. C. NEVILLE, M.A., M.D. Univ. Dubl.; M.K.Q.C.P.; Physician to Pitt-street Institution for Diseases of Women and Children; late Assistant Physician to the Coombe Hospital and Maternity.

THE following case presents so many points of interest that I have thought it worthy of recording before this section :—

CASE.—*Left hemiplegia on morning after delivery in a 7-para. Aortic valvular disease and fatty degeneration of the heart. Death in a fortnight.*—E. C., aged thirty, married ten years, was confined of her seventh child on the morning of the 7th December, 1879. Labour was normal. Previous labours had also been normal. A few days after the birth of last child, eighteen months ago, she is stated to have suffered from some form of

[a] Read before the Obstetrical Section of the Academy of Medicine in Ireland.

eclamptic attack, attended with insensibility; the lochia then stopping permanently upon the second day. She had, however, recovered perfectly, and nursed the child until it died at four months. For the past year she has endured much hardship, her husband having been out of employment, "on the tramp."

During the evening after delivery she was restless, talking somewhat incoherently and sleeping scarcely at all during the night. On the following morning (8th instant) she felt much better, talked quite rationally, and complained only of some slight headache. She sat up in bed, and was combing her hair, when she suddenly felt giddy, fell back, and "was convulsed." The convulsions lasted only a short time, and were followed by partial insensibility and heavy breathing.

I saw her about two hours afterwards; she was then completely hemiplegic on the left side, the limbs of which were rigid, the left leg being extended and everted. The right limbs were subject to frequent choreiform movements, but could be moved at will. The head was kept sharply bent to the right side, towards which also both eyes were directed. The right pupil responded normally to light, but the left remained constantly dilated. There was well-marked paralysis of the left side of the face. Though some amount of stupor existed, the patient could easily be roused to understand questions, to which, however, she was quite unable to give any articulate reply. The power of speech was not completely lost, as she was still able, with some degree of indistinctness, to utter certain words, and made obvious efforts, when roused, to do so, to explain her symptoms. Her pulse was weak and irregular (80), and her temperature normal. Respiration was slow and laboured. No lochial discharge, and no abdominal tenderness, the uterus being well contracted, and milk having appeared in both breasts.

In the evening of the same day, the affection of her speech, which had become very marked, had almost entirely disappeared. The movements of the right limbs are also much less frequent. The bladder had been naturally emptied. A little urine, drawn off with a catheter, proved to be quite normal. Pulse 84. Temp. 98·5°.

9th December.—Complains of severe headache on the left side of the head. Milk more abundant. No lochia. General condition unaltered.

10th.—Headache less. Bowels having been only once moved slightly since labour, she was ordered a soap and water enema, which acted well. The lochia being still absent, the vagina was syringed with warm Condy's solution, and turpentine stupes applied over the abdomen. Examination of the urine showed that it was acid in reaction, concentrated (sp. g. 1030), depositing a thick sediment of light-coloured urates. No albumen or casts.

The area of cardiac dulness is considerably increased, and the apex beat, badly marked and widely diffused, can be best felt on a line with,

and about two inches below, the nipple. The heart's action is variable, tumbling and irregular at times. The aortic sounds are both very indistinct, but with a binaural stethoscope I think that there are both an obstructive and a regurgitant murmur. The second sound is certainly louder over the pulmonary artery. The pulse in both radials is visible and jerky, and especially so on the right side. Temperature normal. Sensation is greatly decreased or abolished on the paralysed side. When the left leg is pricked with a needle, the patient denies feeling it; but brings up the right leg to rub the part, or to lift it out of the way. A prick of the needle is at once localised on the right side. The left leg makes some slight unconscious movements to escape irritation. Rigidity of the limbs is much less marked than at first. The face has a very waxen appearance, especially on the paralysed side, which is polished and glossy. Crumbs of bread stick, after eating, to the paralysed half of the lips.

14th.—The milk having become scanty, the child was removed from the breasts. The pulse is now quicker and weaker (104), and the evening temperature is 101·4°. Rigidity has quite gone. Complains of constant pain in the left ankle and up the left leg. Condition otherwise unaltered.

17th.—There has been a decided rise in the temperature for the last three days; the evening temperature varying from 100·5° to 102·5°, with slight morning remissions. The pulse is weaker and faster than at first, and the respirations have become somewhat quickened and laboured. Appetite bad, and she is obviously losing ground. Quiet during the day, but considerable raving at night.

22nd.—Patient died this evening; the heart's action, for six hours previously, having been very irregular and weak. During this time she complained a great deal of severe angina-like pains, caused, she stated, by the heart's action. Respiration difficult. Semi-comatose before death, with lividity of face and extremities.

The *post mortem* examination was made eighteen hours after death, by the late Dr. Harvey, whose report was as follows:—

Rigor mortis slight. Breasts flaccid, still containing a good deal of milk. Uterus pale and well contracted, almost to its normal size. Peritoneal cavity normal. Kidneys and liver healthy. Spleen pulpy and enlarged. Pleural cavities healthy, except for some slight old adhesions. Lungs well collapsed. Slight excess of pale straw-coloured fluid in pericardium. Heart large and thickly enveloped in fat. Right auricle large, and contains a large-sized clot. In the right auricular appendix there is a clot, which is probably ante-mortem. Right ventricle large, with very pale muscular fibre. Left auricle not very large, with an indistinctly ante-mortem clot in its appendix. Left ventricle contains a similar clot, more characteristically ante-mortem. Its muscular walls

are somewhat hypertrophied, and better coloured than those of the other cavities. Water poured into aorta flows gradually into ventricle, through the valves. Slight commencing atheroma of the valves. One of the semi-lunar valves presents a small conical vegetation, with vascular and abraded apex, evidently of recent origin. Other valves healthy. Lungs healthy, excepting slight emphysema. On opening the dura-mater a considerable amount of semi-turbid fluid is found upon both sides, more especially beneath the arachnoid. The right carotid, cut across in removing the brain, is found to be occluded by an embolus, extending some distance along middle cerebral artery. The middle lobe of the right side is much softened, and some slight amount of purulent-looking fluid is found in the lateral ventricle of the same side. The optic thalamus and corpus striatum are soft and pulpy upon the same side, markedly contrasting with their healthy condition upon the left side.

I should add to the above history of this case that this patient had never, so far as I could ascertain, complained of any symptoms specially referable to the heart during her pregnancy, and that she had never suffered from rheumatic fever or any of the more usual causes of heart trouble.

The case which I have thus recorded, from notes taken at the time, raises, I think, some very interesting questions upon which much has not yet been written—the ætiological relations of endocarditis and of certain forms of paralysis occurring during pregnancy or the puerperal state. It is all the more worthy of record in consequence of the *post mortem* examination having been made by so well-known an authority as the late Dr. Reuben Harvey.

I purpose briefly considering, firstly, the connection, if any, existing between endocarditis and pregnancy, including the puerperal state; and, secondly, the causation of what has sometimes been called "puerperal hemiplegia."

The conditions of the blood, and vascular system generally, of the pregnant woman, tend to establish an *à priori* probability in favour of the causative or predisposing influence of pregnancy in regard to endocarditis. These conditions, which may be assumed as being well established, consist in (1) an increased quantity but deteriorated quality of the blood; (2) an hypertrophy of the heart, especially of its left ventricle; and (3) an increased blood tension. The total mass of the blood is largely increased in quantity during pregnancy, a fact chiefly due to an increase of its watery part. The red globules are notably decreased, and the white ones increased

in proportion to the amount of fluid; and from the sixth month onwards there is a marked increase in the proportion of fibrin. It must be further remembered that shortly after delivery we have the blood stream further adulterated by the discharge into it of much of the waste stuffs of the disintegrative processes attending involution.

The hypertrophy of the heart, now generally admitted, though its constancy is by some denied, is simply an example of physiological adjustment to increased work. The increase in work is necessitated by the formation of the utero-placental arterial and venous systems, as well as by the increased volume of the blood and heightened arterial tension. The heart also beats more frequently than normally, so that in every way its work is increased.

Sir J. Simpson, in 1854, was among the first who suggested the influence of pregnancy upon the genesis of endocarditis. Having indicated the general connection existing between endocarditis and diseases attended by a vitiated condition of the blood, he argues thus:—"We cannot wonder that similar lesions should occasionally occur in the puerperal female, for the condition of her blood is temporarily changed even under normal circumstances, and often becomes much and morbidly changed under the abnormal circumstances to which she is then liable to be exposed, so that its characters are then more or less assimilated to those of the same fluid in the subjects of acute rheumatism and chronic albuminuria." Again: "During the puerperal condition the blood is more loaded with new materials—intended, some for secretion and some for excretion—than at any other term of life, and hence is specially liable to diseased changes under the superaddition of any exciting or septic cause." And in the same essays he pointed out quite clearly how the hyperfibrinous state of the blood before or after delivery predisposed to the formation of loosely adherent coagula upon the surface of any old endocardial roughnesses.

The five examples of puerperal endocarditis given by Sir J. Simpson were probably all cases of acute vegetative, grafted upon a previously chronic, endocarditis; and one of them is further specially interesting, as having been associated, as in the case I have recorded, with hemiplegia. I do not wish, however, to delay over the dangers which, since Simpson's time, have been universally accepted as pertaining to old endocarditis during pregnancy. It is sufficient to point out that they consist largely in the tendency of such chronic inflammations to become intensified and acute,

owing to conditions of the blood and vascular apparatus, which must be accepted as likewise tending towards the development *de novo* of endocardial inflammations at such times.

But beside this recrudescence of an old inflammation there is another form of endocarditis, universally acknowledged to arise, in some cases, as a result of pregnancy, and still more frequently shortly after delivery. It may then arise *de novo*, or graft itself upon a pre-existing endocarditis, and it may originate from a puerperal as from any other pyæmia, or spontaneously, so as to give rise of itself to a typhoid or pyæmic condition, marked by numerous small metastatic abscesses. Its attack in a previously healthy subject is often signalised by a rigor, and the true cause not being suspected, the disease is mistaken for some other acute disease. It is by no means improbable that some of the rare examples of the so-called "puerperal fever," arising during the last weeks of pregnancy, without any recognisable means of hetero-infection, may really have been cases of this quickly fatal form of endocarditis. It is almost certain, however, that this is really a septic endocarditis, though the source of the organisms (micrococci) cannot in many cases be explained. The micrococci of this disease do not propagate in the blood of the patient. They are carried in minute embolisms from their cardiac source, and seem to give rise to metastatic abscesses by the virulent properties of their chemical products. When inoculated they multiply locally in the tissues of other animals (rabbits), and give rise to a very intense inflammation. What I desire especially to point out as regards this disease is, that it may arise suddenly and spontaneously during pregnancy or the puerperal state without the necessary pre-existence of any pyæmic condition. A very striking fact in reference to this form of puerperal endocarditis is alluded to by Lancereaux (*Archives Generales de Medicine*, Vol. I., 1881, p. 402), viz., that it is specially likely to occur in patients whose nervous systems are for some reason depressed. Thus he has collected seven cases, in six of which the patients were unmarried primiparæ. We have to this fact a remarkable analogy in the well-known pre-disposition of unmarried primiparæ to suffer from the various kinds of septic diseases of childbed.

We have seen that pregnancy is capable of starting fresh developments of inflammation in cases of old endocarditis, as also that it may originate a malignant form of endocardial inflammation. It has also been affirmed by some that it may constitute a true exciting cause to subacute or chronic valvular disease. Whether or no this

is true—as it may appear to have been so in the case recorded—I am not prepared to say upon the evidence I have been enabled to collect from various sources. Although in my case the opinion of Dr. Harvey seems amply sufficient to prove that the aortic lesion was of quite recent origin, yet it must be remembered that the patient had suffered unusual hardship and privations during her pregnancy. And endocarditis has been known to arise under such circumstances, apart altogether from pregnancy or any of its more generally recognised causes. This is just one of those cases in which we might, with some show of reason, fall into the error of mistaking a coincidence for an effect. Without wishing to give any decided opinion upon this question, I may say, without prejudice, that the evidence I have been able to collect appears insufficient to establish a true causal nexus between pregnancy and endocarditis other than ulceration attacking previously unhealthy valves.

The occurrence of various paralytic affections during pregnancy and the puerperal state has long been recognised and explained by different hypotheses, *e. g.*, hysteria, direct pressure upon the pelvic nerves, albuminuria, apoplexies, &c. It is only comparatively recently that the origin of the most common of these paralyses, viz., hemiplegia, has been proved by accurate *post mortem* examinations to depend upon organic lesions of the brain, resulting from emboliems of various kinds. Simpson, in his papers upon puerperal arterial obstruction, has recorded two cases of hemiplegia resulting from organic lesions of the brain caused in this way; and Ollivier has also recorded an example of what was obviously an embolic hemiplegia. In 1879 Fordyce Barker recorded three cases of hemiplegia occurring in puerperæ, and due to embolism. In one of these cases the hemiplegia supervened suddenly during the first stage of labour in a previously healthy primipara, aged 32. The patient recovered, but the paralysis, though lessened, remained chronic. In Dr. Barker's other cases the patients died, but the nature of the cardiac lesion, the fever and delirium during life, and the numerous infarcts of other organs than the brain found after death, seem to show that these were cases of ulcerative endocarditis. In one a subacute rheumatism appears to have been present. It is further noteworthy, that in these two cases of ulcerative endocarditis, recorded by Fordyce Barker, the patients were unmarried, a fact which supports Lancereaux's observation already noted. In one of the latter's cases also an embolism is recorded as having obliterated the left Sylvian artery.

In February, 1881, Dr. Hughes Bennett published in the *British Medical Journal* a clinical lecture upon chronic hemiplegia, originating during the puerperal state. He records six cases of this affection which came under his notice during three years in hospital practice. In only one of these cases did there exist, at the period of their coming under his notice—at from eight weeks to eight years after the accident—any distinct evidence of cardiac affection. They all occurred in rather young women, averaging 25 years; and this fact is regarded by Dr. Bennett as decisive against the cause having been hæmorrhage. The permanence of the brain lesion is likewise against the theory that they were due to albuminuria, which was moreover absent at the time they came under notice. He sums up his conclusions as follows:—"1. These six cases of hemiplegia are due to a destructive lesion of that part of the brain supplied by the middle cerebral artery. 2. The disease began suddenly during the puerperal state, which was the pre-disposing cause of it. 3. The exciting cause was probably an embolus. 4. This embolus was the result of acute endocarditis, or due to the hyperinotic state of the blood, or possibly to both of these conditions combined." All Dr. Bennett's cases being still alive, there was of course no possibility of certainly verifying his conclusions.

In many of the cases of embolic hemiplegia previously recorded, and thus verified, the lesion appears to have arisen in consequence of the ulcerative form of endocarditis. In that, however, which I have now recorded, the history of the case, and the *post mortem* appearances, prove with sufficient clearness that the embolus arose in consequence of an acute or subacute simple endocarditis, originating during the latter months of pregnancy, and affecting one only, and that an aortic valve. Death seems to have resulted from the failure of a fatty heart to carry on the circulation, and from the largeness of the cerebral area which had its nutrition suddenly destroyed.

ART. VI.—*Basic Aural Dyscrasia; being an inquiry into a condition of system disposing to Aural Disease, now for the first time described as the Basic Aural Dyscrasia, involving an explanation of the mode of causation of Tinnitus Aurium, and a description of a hitherto unnoticed form of Deafness—Vascular Deafness.* By ROBERT T. COOPER, M.A., M.D. Univ. Dubl., London.

[*Concluded from page 36.*]

THE confusion that has arisen with most aural writers—Dr. Woakes, of course, is a learned exception—in regard to the interpretation of the symptom, tinnitus aurium, is due to the retention of erroneous estimates of the part played by the nerves. Thus, Mr. Hinton[a] states that he "has come to regard tinnitus of a distinctly musical character as a sign of nerve affection." But surely it is beyond comprehension to suppose that a nerve can produce a noise of any intensity; nerves do not give off noises in other parts of the body; why should they in the ear? The auditory nerve takes cognisance of the finer aerial disturbances that impinging upon the membrana-tympani are conveyed to it, this being its province in the economy; but surely there is not a particle of evidence to prove that a continuous and sustained pressure, either upon its trunk or upon its labyrinthine expansion, will produce sound, save such as may be transmitted from the blood-vessels, owing to the mechanical interruption to the blood-stream.

We are in the habit of expressing ourselves as though the nerves produce or originate all manner of sensations—among others that of pain; and various ingenious suppositions have arisen as to the tissue-change the nervous structures undergo before pain is felt. The late Dr. Anstie, for example, laboured to show that neuralgia should be considered an independent affection, due to atrophy of the roots of the posterior spinal nerves. But why, in the name of common sense, limit our inquiry as regards the ætiology of pain to the nerves? Does not all pathological investigation go to show that nerve-tissue may be profoundly implicated without the phenomenon of pain being manifested?

I look upon it that the neurility (Lewes) of a nerve implies the possibility of its registering in a variety of ways the conditions of other parts, and that the phenomena attending pain show that this is produced to perfection only when fibrous tissue is inflamed, placed upon the stretch, or otherwise injured, and that pain is the

[a] Op. cit., p. 286.

announcement of the condition only when a spinal nerve is directly or sympathetically called into play, and that therefore for pain to be produced to perfection it requires two factors—a spinal nerve and fibrous tissue.

Similarly, when irritation exists in the coats of the blood-vessels, the vaso-motor distribution of nerves, belonging as these do not to the spinal but to the sympathetic system, records such involvement by irregular contraction of the walls of the blood-vessels, and such irritation, while it does involve the supposition of an increased flow of blood wherewith the vascular walls are nourished, does not imply a corresponding increase in the amount of the contained stream.

Few organs of the body are found to be more often the seat of very severe pain than the ear. It would be difficult to show that such otalgia ever occurs in a marked degree independently of a serious structural alteration of the fibrous sheathing of the ear; and, contrariwise, it would be easy to prove that great destruction of nervous tissue—even of the auditory nerve itself—may take place without much suffering. In support of his position that the coronary arteries undergo diastole while the heart is undergoing its systole, and *vice versâ*, Swedenborg,[a] in a learned disquisition on the action of the coronary vessels of the heart—a chapter in physiology that the student ought not to be deterred by the questionable views of the author upon other matters from reading—appeals, for the establishing of his position, to the testimony of such well-known patriarchs in the world of anatomy as Lancisi, Morgagni, and Boerhaave, particularly to the statement of the last, that the coronary arteries undergo diastole while the other arteries of the body are performing systole.[b]

Admitting, for the moment, that this is the case, the conclusion would be legitimate that a similar movement is carried on all along the line of arterial distribution, and that during their systole the arterial walls are being supplied with nutritive material, and that it is while being thus fed that, in the presence of an irritation, irregular contraction of the arterial walls takes place, with the result that the advancing current no longer passes by with its accustomed ease and regularity, but gives off murmurs proportionate to the amount of disturbance in the stream.

Irritation seizes upon the coats of the blood-vessels. The

[a] Economy of the Animal Kingdom. Clissold's translation. Vol. I. P. 401.
[b] Inst. Med. n. 183.

presence of this irritation is announced by disturbance in their vaso-motor nervous distribution. It will follow, or at all events be extremely probable, that if disease-force should thus, in the first instance, settle upon the blood-vessels, it may also, correspondingly, occasion, at the outset, more disturbance of their nervous entwinings than of the actual tissue of the blood-vessel walls.

The very look of some patients afflicted with chronic deafness, the nature of the shock that lessened their power of hearing, their tendencies to disease—nervous rather than inflammatory—previously to the coming on of the deafness: all go to prove that we would take much too limited a view of the mode of inception of deafness were we to confine our attention to the blood-vessels alone.

Whether or not the foundation has been laid in a weakened condition of the vascular structures—as I believe most thoroughly to be the case in the majority if not in all these cases—for the occurrence of deafness in the face of depressing influences is not now in question.

We are engaged not upon a consideration of the pathology of all ear affections so much as on the discussion of the mode of inception of a particular variety of the symptom, deafness.

We have said that there is a form of the symptom meriting the title "vascular deafness," and we mean to restrict the term to those cases in which the manifestations are such as may safely be considered due from first to last to vascular disturbance.

Now, if in vascular deafness there be really an irritation present in the coats of the blood-vessels the inference is plain, that an increased measure of such disease-force, should it extend to the ear, will show itself by acute inflammation. *In other words, vascular deafness cannot begin suddenly, except in the form of acute otitis.* It is, therefore, slow and gradually progressive in its course, and equally gradual in its mode of dispersion.

It is different, however, with a deafness in which nervous manifestations predominate. This announces itself suddenly and after a great nervous shock, and is liable to disappear with equal rapidity.

I have met with several cases of what, on looking back, I now believe to have been instances of profound deafness with nervous characteristics in which the lost hearing was recovered suddenly. In one of these the history was that the patient had, eighteen months before, gone through a trying period of mental distress and anxiety, after which she found herself getting

quite deaf, and as previously she had had a similar seizure of deafness that had without treatment gone away, the inference is natural that there may be a form of nervous deafness which, like other nervous affections, comes on in paroxysms and disappears suddenly.

Some time ago, on inquiring after a patient who had been unsuccessfully treated for pronounced deafness, with a highly nervous and overwrought condition of the system, the reply elicited was that she had awoke one morning with her hearing perfectly restored, and this at a time when no treatment whatever was being pursued. Of course, statements like this are not to be accepted without considerable misgivings; but, while we find cases credited with such peculiarity, it is right to inquire whether, apart from obvious structural alteration, the occurrence is possible; and I think we may safely answer this in the affirmative.

Such cases appear to be rarer than those of true vascular deafness, and are indistinguishable from it, save by their history. A deafness presenting itself with nervous characteristics may come on—most likely does—by leaps and bounds. The patient will some days hear perfectly well, at others be almost "stone deaf." Except, then, by its mode of progress and early history, a nervous deafness is indistinguishable from the vascular variety, the nervous merging, as in time it must from its pathology do, into one with vascular characteristics. The nervous involvement being so intimately blended with the vascular structures, it is not always possible to comprehend it in classification, except with the vascular class. This statement as to nervous deafness is made independently of the question, already discussed, as to how far authorities recognise a nervous deafness.

Chronic vascular deafness, as met with in adults—by which I mean a deafness that has lasted over three or four years—though with patience a perfectly curable affection, never, that I have known, disappears in a short space of time.* Unless, therefore, sufficient time be given it is an absolutely incurable affection. With time and patience it is as curable as are corresponding disturbances of other

* The only exception we make to this statement would be in cases where the appearance of the membrane shows evidence of past or present ulceration. Vascular deafness may also improve upon the occurrence of acute inflammation, which, apparently by a process of substitution, causes the original malady to disappear. Thus, Hinton (op. cit., p. 137) says :—"Instances occur in which the hearing is made better for the time by acute affections of the throat and even by scarlatina." I have myself met a case in which deafness was quite removed by scarlatina.

organs, the comparative slowness of dispersion being fully accounted for by the anatomical peculiarities of the ear. In considering the probability of a deafness disappearing it is all important to take account of the condition of the circulation; the prognosis will much depend upon this. In the young and active it is, like other affections, greatly more curable than in the aged and in those in whom the circulation has undergone organic change.

Were we discussing the action of medicinal agents upon the ear the distinction between these two forms of deafness would receive additional and more pointed illustration. In regard to the stimulative, non-nutritive agents man selects for the refreshment of his system, nature seems to prompt him to make use of those that minister to the nervous as well as the vascular sphere of his organism, and it is probable that indulgence in alcohol is more hurtful when partaken of by itself than when, side by side with it, the modifying influence of tobacco is called into play; and so, *vice versâ*. Mr. Jonathan Hutchinson suspects tobacco-amaurosis to be more common in teetotallers than in those accustomed to a moderate use of alcohol. Similarly, quinine and iron represent both spheres of action; and in chemical combination we get a remedy that seems to combine an action upon both departments in the picrate of iron.[a] This has, of course, to establish a reputation, but from practical experience of it I can without hesitation prophesy for it a brilliant future. The pathological indication for the picrate is the presence of a considerable amount of hepatic inertia, coated tongue, constipation, dark circles round the eyes, and a bilious complexion—a counter-indication, the presence of actual chlorosis, and not, be it remembered, of mere anæmia. I give these indications, I may say, *en passant*, entirely upon my own responsibility. It is probably the only preparation of iron that has a decided hepatic action.

I have throughout gone upon the principle that, underlying the great majority of ear-diseases attended with deafness, by whatever designation these are known to medicine, there is discoverable by the stethoscope evidence justifying the supposition that vascular impairment is in operation in the production of the accompanying aural enfeeblement; and it is evident there will come a time at which the phenomena presented to us are of a character not to be accurately described under the terms catarrhal or nervous, nor yet even under the denomination of rigidity and thickening of Toynbee,

[a] The picrate of iron is soluble in (about) the proportion of 1 to 50 in water. This solution is of a yellow colour and very bitter.

nor the more acceptable one of proliferation of Roosa; and my intention is to propose for this large class of cases, now for the first time referred to their proper pathological origin, the designation of *vascular*.

In taking up this position I will be better understood by defining vascular deafness before passing on to descriptive particulars.

By *vascular deafness* I mean *a variety of impaired hearing, unattended by visible alteration of or destruction in the tissues of the ear, and not fairly ascribable to the blocking up of the external meatus or of the Eustachian tube, nor to hyperplasia of the anatomical elements of the middle ear, nor yet to paralysis of the auditory nerve.*

This form of deafness is one in which the hearing becomes gradually and almost imperceptibly impaired; it is, therefore, when established, essentially a chronic deafness. The first warning the patient gets of a lessened power to hear is when out dining, or in an apartment where many are present, more especially if these be strangers to him; the hearing is then found to be defective, inasmuch as voices are heard indistinctly and run into each other, the intonation of the different speakers not being as marked or distinct as is usual; nothing is perceived by the ears, in fact, but a dull monotonous hum, altogether unlike the sharp and varied buzz that meets the unaffected ear upon entering into general company. This would be unnoticed were it not that the patient, when so situated, if addressed, finds it impossible to catch every word of the sentences, even when distinctly spoken, and in, it may be, a friendly and familiar voice; his ears feel dull and thick as if stopped up, and this although his companion's voice has hitherto been heard with the greatest ease and clearness upon every previous occasion—in a word, the din caused by the several simultaneous voices has apparently created confusion. This is, therefore, *par excellence*, and especially in its early stages, the *confused* or enfeebled *hearing*.

The same thing occurs if at dinner he is addressed from across the table; he then finds himself unable to catch the words, and involuntarily turns a distressed look to those near him, as though he wished them to cease speaking. The patient's anxiety increases as the disability grows upon him, and he seeks the advice of the family attendant, with the very laudable object of "seeing if there's wax in the ears!" The hope of such pathological causation may

prove a forlorn one, and as at this early stage the watch-hearing is probably fair the professional assurance that nothing whatever is wrong is but temporarily satisfying, the more so as the same series of disagreeable experiences is repeated each time he goes into company.

Such is by no means the only way in which this form of deafness begins, for we sometimes find that long before any deafness is discerned the patient may complain of recurrent collections of cerumen in the meati or of mucus in the Eustachian tubes, which dull his hearing, but which, as these constitute an easily-removed impediment, are regarded as no source of anxiety.

The frequent recurrence of ceruminous collections—and the same applies to tubal obstructions—means (unless accounted for by imperfect or over-assiduous cleansing, or explicable by an imperfection in the shape of the meatus that prevents the normal expulsion of the wax), as certainly as any other sign an indication of increasing aural weakness, and the therefore probable establishment at some future date of enfeebled hearing; while, again, repeated colds, with or without the manifestations of naso-pharyngeal catarrh, may be the sole precursors of the form of deafness we are describing.

Again, the premonitory symptoms may be those of the musical or the pulsative tinnitus, and this may exist for years before the least sign of deafness is noticed; contrariwise, the deafness may become established years before the noises are complained of.

A tendency to toothache, neuralgia, or dental irregularities, with alveolar irritation, may precede this deafness—in fact, every form of inflammatory disease, blood-loss, or chronic malarious disturbance, may constitute the prodromata of the affection—the important point to notice being that the first warning the patient gets of anything being amiss with his ears is very often this sense of confusion in the hearing. Strictly speaking, we may have a form of vascular deafness, the onset of which is more sudden than that we are describing, as when the deafness is ushered in as the concomitant or the immediate sequela of an acute pyrexia; but when, as generally happens, these cases involve the supposition of serious structural alteration in the tissues of the middle or internal ear, they will be better comprehended under the obstructive class. If, now, we make close inquiry of a patient affected with vascular deafness, it will be evident that the patient's description corresponds with what may, with propriety, be regarded as a condition

of weakness of the ear; all the complainings point to the fact that the ear is easily *fatigued*, and this in spite of the frequent protestation that nothing bordering upon physical or mental exhaustion has ever been experienced. It is more frequently the case, however, that patients' feelings compel them at once to recognise that enfeeblement is the predominant condition imposed upon the ear, and they point to past, if not to present, painful experiences of nervous exhaustion. From this description it will be evident that the local enfeeblement can be brought on and increased by the strain induced by all prolonged attempts to listen, and that consequently the discontinuance of such must be advised.

Following up inquiry we find that the parakusis is especially complained of in a close and heated or badly-ventilated apartment, especially if many persons are speaking together; some persons finding that their hearing falls off when in a warm room, not immediately, but more especially *after* the lapse of a little time. As might be expected, the patient thirsts for fresh air, and longs to be in a hilly country, in a well-oxygenised air; and then he finds that *after* a railway journey, although the hearing may be increased while in the train, it is, upon the completion of the journey, distinctly worse, and further investigation will render it evident that all sources of physical or mental exhaustion are more than usually overpowering, and tend particularly to enfeeble the hearing. Anything that creates confusion of the ear, even, in some patients, the act of mastication of food, will deafen the patient; so will the act of stooping down, or placing the head in strained positions. Frequenting public assemblies, it is evident, will be particularly injurious to the deaf patient afflicted with the confused hearing, or vascular deafness; for not alone does the prolonged strain to hear exhaust him, but the worry and distress of mind occasioned by the inability to catch the sounds gives him many a restless and unquiet night, all the more aggravating as the din of the previous day appears to linger on his ears.

Town-life, with its sewer-gases and mephitic vapours, not alone therefore causes this infirmity, but the avocations it enjoins upon its victims tend to reproduce or confirm their distress. The sufferer from confused hearing is particularly distressed by attempting to listen to speakers whose intonation is indistinct; as a lady some time ago remarked to me, she was obliged to impress upon

* I have often noticed the watch-hearing of these patients to have fallen off during their stay in my consulting-room.

her clergyman how great would be her enjoyment of his sermons could he only pronounce "the blessed consonants" with clearness! When we come to the symptomatic distinction between this and the catarrhal as well as the ceruminous deafnesses, the contrast is in every way remarkable. In both these latter varieties we get, generally speaking, the history of sudden and unmistakable "cold," and of pronounced and unvarying deafness from the first. Should difficulty of diagnosis exist, local examination and the result of air-bag inflation will at once clear up all obscurity; for, if catarrhal, Politzerisation will constitute for its relief an expedient at once *cito tute et jucunde;* properly performed, it acts in a manner equally satisfactory upon catarrhal Eustachian obstruction with that of the syringe for ceruminous impaction, and the patient is dismissed from the consulting-room to all appearances cured of his infirmity, but by no means cured of the vascular enfeeblement from which it originated.

The action of the air-bag inflation, however, upon the confused or vascular deafness is in every way different. Here it has just the same effect upon the patient's power to hear that might be expected from a railway journey; it, temporarily I must admit, but still distinctly, increases the sense of confusion and aggravates the deafness, or, if relief follows, it is but partial and reasonably explicable upon the supposition of there being a certain measure of catarrhal impaction present. More than this, the Eustachian tubes may be, and often are, patulous in old-standing cases of vascular deafness; inflation may, therefore, be perfectly successful in freeing the tubes without its performance bringing any relief to the patient.

When we come to the watch-test the discrimination between these varieties is additionally striking; pronounced inability to hear a watch-tick very often characterises the catarrhal or ceruminous deafnesses at the time when advice is first sought for their relief; in the confused or vascular variety the power to hear a watch lessens in a gradual and progressive manner, a great defect implying with these patients a case that has lasted a long time and is proportionately intractable; for this deafness, therefore, advice is more often sought for in the first instance when a watch-tick can be heard very fairly.

It would answer no good purpose to enter further into descriptive particulars; any intelligent inquirer into symptoms as a guide to pathology will at once recognise the stability of our position.

In chronic aural diseases the morbid action, let us remember,

in advancing upon the ear, which we may suppose it to do in vascular deafness from the larger blood-vessels, will encounter, not, as in other organs, a united and compact phalanx of arteries, nerves, blood-vessels, and muscles, but an army of out-riders, protected from any sudden flank movement, and carefully disposed, while maintaining their connexion with, and supported from, the central depôt; hence as these, one by one, are wounded (enfeebled) or destroyed, expression corresponding with the changes effected will be apparent in the alteration and commensurate modification of the symptoms.

As time goes on, therefore, the changes in the character of the hearing-power left to the patient with vascular deafness are so various that we doubt an attempt to exhaust description of them would answer any useful purpose; we have pointed out enough to enable any observer to recognise the primary stages of the affection, which, from the standpoint of a physician to the ear in contrast with that of a mere aurist, we consider a matter of the greatest importance.

It is obvious that for the prevention of a disastrous affliction like deafness we can hardly dilate at too great length upon the initiatory symptoms that constitute the early prodromata of the affection. These, as we hinted, are not to be found in recognisable association with the ear itself. We, therefore, naturally turn to a consideration of the symptoms of the pathological lesions prevailing in connexion with the attendant and premonitory form of ill-health—the basic aural dyscrasia—that precedes it. This, as we have seen, we take to be a condition of diffused irritation of the coats of the blood-vessels, both of the veins and arteries.

The existence of an irritation, fully established as we consider it to be, naturally leads us to look for the symptoms that may reasonably be expected to accompany such structural imperfection. Foremost among these are the disorders traceable to those orbital derangements that are referable to disturbance of the third nerve through its association with the sympathetic; and here the character of the involvement will, as with the ear, be best understood by the employment of the homely terms, confusion and fatigue.

Long prior to the time when the patient becomes uneasy about his hearing, a difficulty is found in opening the eyelids, especially after a fatiguing day's employment; there is a heaviness and a sense of weight about the eyes, lachrymation is complained of, and it may be supra-orbital neuralgia, of a character such that great

sensitiveness to sharp sounds during the presence of pain, and the reverse when pain is absent, prevail. This symptom is, of course, more pronounced in some cases than in others, and it is often accompanied by frequently-recurring fits of physical depression, which are wholly inexplicable to the patient himself.

The appearance of the eyeball is at this early stage, to an unpractised and unwarned observer, in every way normal. To the skilled examiner it is very different;[a] he perceives a bright glossy look without actual observable vascularity about the globe, the pupils are dilated and extremely sensitive to light; and this appearance, however few the subjective symptoms referable to the eyes may be, may last for years without there being the slightest apparent defect of sight, or there may be present at an early stage a certain measure of astigmatism. The sight becomes easily confused, the eye gets fatigued, and the patient substitutes one form of artificial light for another in the hope that this may bring improvement with it. It does not; and as the effort to read is persevered in, a sensitiveness to bright light and a fiery halo round candle-light is complained of—the fact being that the pupil will not keep contracted, but is admitting to the fundus more light than the retina will tolerate; there is, in fact, a condition of slight irido-chorioiditis, in addition to that of conjunctival irritation, set up. If now the iris be examined, by thrusting a strong light suddenly upon the eye, it will be found to contract evenly enough, but on withdrawal of the light the subsequent expansion will be seen—in many cases, not, of course, in all—to be irregular, the natural evenness of the free pupillary margin being lost. If, at this stage, air-bag inflation be resorted to—supposing the deafness to have begun—and the patient's pupils be watched *after* its performance, these will be found (without any alteration in the amount of light brought to bear upon them) to contract and dilate with great rapidity, the dilatation being irregular, while they immediately resume their former evenness of outline.

Such ocular derangement as this we have described is not one merely of paralysis of the third nerve, nor a lesion of any single part of the eye, nor are these symptoms always nearly so marked

[a] "Dr. Bader has been good enough to examine by the ophthalmoscope, for several months together, every patient who came to me with symptoms which I considered of a 'nervous' character. With few exceptions he found hypermetropia present, and he considered it to be due, not to a flatness of the eyeball, but to 'a certain paralysis of the third nerve.'"—Hinton, op. cit., p. 285.

as we have described them; the condition present is essentially a form of diffused irritability of the eyelids and eyeball, much more pronounced in some cases than in others, but probably in operation in the early stages of all vascular deafness. Allowed to go on untreated, the parts invaded invariably manifest, after a time, a sluggishness and inactivity, so that, like the parent irritation of the blood-vessels, necrobiotic changes result—it is, in fact, the first warning of what in time may announce itself as an *arcus senilis* without, or perhaps a cataract within, the eyeball.

Besides the sensations of heaviness, weight, and twitchings of the eyelids, there will also often be a feeling of irritation of the ciliary border and of the hair-bulbs, the patient being unusually prone to rub his eyelids or depilate the lashes; hence a certain thickening of the eyelids will after a time be noticed, and trophic changes (such as are represented by the formation of tarsal cysts or small warty growths) will result.

Passing down now from the eyelids, we find this twitching may be present in the muscles of the face. In old-standing cases we often notice trophic changes to ensue of by no means an unimportant character; the natural lustre of the cutaneous surface, which in early days, with its roseate tinge, may have been taken for an indication of health, as years roll by, presents a dull, impoverished appearance, and it is upon such ground, as we all know, that lupoid ulceration is so likely to settle. Then we get upon the face as well as the eyelids points of transitory irritation that cause the patient very frequently to rub the part, and which, as they are seldom noticed by him, constitute a symptom of which complaint is seldom made, but which may readily be recognised by an observer attentive to the habits of those disposed to this form of irritability. Upon the neck, too, symptoms of long-standing irritation, going on to the establishment of those of deficient innervation, show themselves. Among the former we have the angioleucitic swellings of youth, with their accompanying neuralgias, while among the latter, and in those in whom the deafness is more advanced, we can see round the neck, upon a lustreless, ill-nourished, and discoloured skin, whose surface often presents a brown, leather-like appearance, crops of long, narrow, pendulous, shreddy, and sometimes of flattened, or even round, molluscum-like warts; one or other of these warty growths being a frequent accompaniment of an advanced period of the affection. A shrivelled, ill-nourished, brown-surfaced neck is, therefore, a frequent attendant upon chronic deafness, and is not a

symptom of the early prodromatous stages of the affection; and this appearance of the neck I believe myself to be the first to describe in this connexion. And then, when we come to the throat and post-nasal region, we find neoplastic growths prevail upon the mucous surfaces, the tonsils enlarge, the follicles of the throat bulge out, adenoid growths cover the naso-pharyngeal space, the nasal mucous expansion thickens; polypi form, catarrhal and mucous discharges make their appearance—all these being more or less common concomitants of ear cases. Properly treated, these are easily removable; untreated, they constitute a barrier to the entrance of air needful for the vitalisation of the tissues, and for the maintenance of an activity required for the dispersion of the widely-spread irritability of the vascular structures. So that it is evident the basic dyscrasia of deafness tends at all points to reproduce itself; from within, owing to the strain imposed upon the blood-vessels in endeavouring to minister to the functional activity of an organ whose use is indispensable to the enjoyment of life; from without, owing to obstructions that prevent the blood becoming oxygenised. Hence the inference is plain, that to treatment, and treatment alone, can we look for a dispersion of the dyscrasia and a restoration of the healthy activities of the ear. There are also nutritional defects to be noticed in other and deeper-seated organs, the heart and brain particularly; but these will be obvious enough to any attentive inquirer.

One word more. It is important, in reviewing these inquiries, to find that septic and other infective agencies are more powerful in effecting settled peripheral mischief when the vascular system is gradually and insidiously brought under their influence than when, as sometimes happens, these induce from the first obvious external manifestations; and it also is important to remember that murmurs in the cervical blood-vessels ought to arouse the examiner's suspicion to the possibility of some poisoning being in operation; so that in reality we must regard the condition of these vessels as an *index hygienicus* of a person's mode of life.

The whole matter may thus be briefly summed up:—The basic aural dyscrasia represents a condition of ill-health in which a diffused irritability attacks the walls of the blood-vessels, and which, left untreated, very often settles upon the ear, giving rise to two prominent ear-symptoms; one of these is an enfeebled hearing-power, or the deafnesses, and of these the majority are divisible into the obstructive and the non-obstructive class, and of these

again the latter can be comprehended under the term vascular deafness.*

The other large class of symptoms are those of the noises heard by patients in the ear, and known under the term tinnitus aurium; and these again are, like the deafnesses, similarly divisible—namely, into the obstructive and the non-obstructive class, the latter being classifiable with the vascular deafnesses.

This, surely, is a simplification of a subject remarkable for its intricacies; and it requires but slight intelligence to perceive that in thus co-ordinating the pathology of one organ to that of the other parts of the body, a gain is secured for the worker in general medicine as well as for him who devotes attention in the main to one department only, be this what it may, of medicine.

We, therefore, conclude by claiming to have for the first time given a reasonable explanation of the mode of causation of the majority of ear-diseases; to have traced them to an origin indisputably vascular; to have shown for the first time that cervical bruits accompany the symptom, deafness, as well as that of tinnitus aurium; to have shown that these bruits are indicative of an affection that, untreated, may end in atheroma of the aural blood-vessels; to have shown that there is no such thing as a functional murmur; to have shown that the duration of life itself may be modified by the treatment an ordinary deafness requires; to have brought the pathology of ear-affections into accord with the most recent researches of Virchow and others; to have shown how disease-force acts upon the structures entering into and supplying the ear in unison with the pathological processes that affect other organs of the body; and, lastly, to have brought the science of aural medicine not only to a level with, but, *as matters hitherto stood*, greatly in advance of other departments of medicine, inasmuch as we can *more accurately* anticipate and prevent the onset of aural disease.

* It would be more correct to speak of (1) obstructed hearing (cerumen, catarrh, embolism, &c.), (2) exhausted hearing (nervous), and (3) enfeebled hearing (vascular), at least in respect of the early stages of deafness.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Insanity and Allied Neuroses: a Practical and Clinical Manual. By GEORGE H. SAVAGE, M.D. London: Cassell & Co. 1884. 8vo. Pp. 544.

THE present is a period of peculiar literary activity in the domain of medical psychology. A few years ago an English-reading student of this subject had but one text-book. Now, besides numerous editions of Bucknill and Tuke, and of Blandford's useful practical treatise, there have recently appeared a second edition of Sankey's Lectures, the admirable Clinical Manual of Spitzka, in which English readers are for the first time made acquainted with the views of modern systematic German writers, and the lectures of Dr. Clouston, a work the value of which it would not be easy to over-estimate from a practical point of view. In addition to these, Dr. Savage places before us the results of his "more than twelve years experience in Bethlem," in the form of a concise clinical manual.

There are many things in this book indicating a very pleasing freedom from the bias of over-specialisation, which is so often apparent in the writings of those who devote their exclusive attention to one branch of medicine. At the very outset Dr. Savage tells us, "the more I see of insanity the more convinced I am that the consideration of mental disorder can only be fairly approached by the consideration of general physiology, *i.e.*, the development, growth, and decay of the body in all its parts. No development or growth can go on without the action of the nervous system. Insanity may depend upon vices of development, vices of growth, or premature degeneration, local or general; but it may depend also upon the bad administration of the servants of the brain. As an old writer has said, 'The brain, like a gentleman, has many servants, but, withal, may be badly served.' Insanity may seem to depend upon physical changes which, at first sight, seem to have little or nothing to do with the brain. Thus it does not need a physician's experience to know how dependent one is for energy and power of work on good digestion. The relation which exists between feelings of dyspepsia and states of melancholia must be fully recognised." Conversely, it is in more

than one place pointed out that worry and anxiety, though mental factors, produce dyspepsia and general nutritional changes, which again react upon the brain, and bring about a state which may end in insanity. Similarly, attention is drawn to the fact that those nutritional changes which appear to have their origin in overwork or trouble may bring about Bright's disease as well as insanity, an observation which has been confirmed by Dr. Charles K. Mills.

On the subject of classification, occupying the second chapter of this work, Dr. Savage, like most modern English authors, strikes an uncertain note. The somato-ætiological arrangement has been relinquished even by the Scotch school, and the older attempts at classification by mental symptoms are dreaded as "metaphysical," while some division is indispensible, if merely for convenience of description. In this latest treatise we are presented with three classifications—one, the author's ideal scheme; another, the classification of the College of Physicians; and a third, the grouping which is adopted in the descriptive portion of the book. The nomenclature of the College of Physicians, as relates to mental disease, is confused, and has no value. The other two divisions well serve to show the difficulty of the subject. The ideal scheme runs thus—Insanity of Early Development (Idiocy in its various forms): Insanity of Childhood: Insanity of Adolescence: Insanity of Maturity: Insanity of Climacteric: Insanity of Age: each class being further sub-divided, chiefly according to clinical features. In this scheme "delusions" are mentioned as a symptom of climacteric insanity in women; otherwise they are not referred to. On the contrary, when we turn to the grouping employed in the manual we find a separate heading for Delusional Insanity, and a descriptive chapter devoted to that form as occurring in men and women of various ages. In fact, although Dr. Savage has not admitted into his ideal scheme that which we consider the most natural of all groups, his observations in the chapter on Delusional Insanity sufficiently show that he has fully grasped its peculiarities: its close connexion with insane inheritance, its very unfavourable prognosis, the gradual development of the symptoms, and the peculiar systematised and fixed nature of the characteristic delusions. The recognition of this condition is of much clinical importance on account of its unfavourable prognosis. It is true the phrase "delusional insanity" is not very accurate, but it cannot be discarded till we get some better name for the condition. The Germans have gotten over the difficulty by inventing a special term for this form of insanity, which they call "primäre Verrücktheit."

If the chapter on classification is a little unsatisfactory, the same cannot be said of that devoted to causation. It is the second longest in the book, and contains the best account of this very obscure subject that has yet appeared in English. Nowhere are the keen observation and penetrating judgment of the author better shown. His remarks on the influence of education and mental work are very judicious—"True education, that is, the true development of mind and body is the best preventive of insanity. Over-education or bad education consists really in the development of one side of the human being at the expense or to the neglect of the rest." With the increase of education "are produced over-ambition, feverish pursuit of gain and pleasure, aggregation in towns, celibacy with vice of one kind and another, and the development of religious indifference and general unbelief, associated with neglect of general hygienic conditions." Again, "a girl of fourteen or fifteen years old is expected to spend twelve hours a day in learning languages, practising music, drawing and deportment. . . . Just as the forced plant may flower out of season, so the forced girl becomes prematurely a woman. The sexual instincts are developed at the cost of the already enfeebled body, and excessive or irregular and painful menstruation occurs in girls who are ill-fitted to bear any extra drain on their strength. Overwork may seem an odd term to give to the combined causation of this state, but, if such a girl be not over-wrought, who is?" "Another example of over-work is that seen in the self-educated man, who so frequently has unbounded desire for knowledge, but does not know how to acquire it. He has a great idea that knowledge of facts is education. . . . He cannot see that education literally and really means the development of all sides of the character, and that mere special culture will fail to make a learned man." Not *education* is to blame, but educational mistakes, and the errors and disappointments arising from education conducted on wrong principles or with false motives.

With regard to precarious occupations we are told "just as the stone is worn by the constant dropping, so the mind is upset by the recurrences of worry; and worry, not work, is the cause of the breakdown." "Work of a monotonous character is injurious, and assists in producing mental disorder." Elsewhere Dr. Savage has rightly insisted that monotony and worry are among the most potent of all factors in the production of insanity.

The chapter on the graver forms of hysteria and hysterical mania contains also an account of acute delirious mania (*delirium grave*,

acute delirium). It is not quite clear why this arrangement should be adopted, and it is open to the objection that it may tend to make the tyro confuse the most serious form of mania with an ailment of entirely different omen.

The chapter on acute mania contains much excellent descriptive matter. Dr. Savage lends his support to the view that "an acute attack of mania is a process which has to be passed through, and that the best thing to be done is to guide and not interfere with it." Another opinion slowly gaining general recognition is expressed in the sentence—"Nearly always acute mania is preceded by a period of mental depression and sleeplessness. These symptoms are associated with epigastric uneasiness." The condition which Neumann has aptly called *Heilung mit Defekt* receives attention, and our author points out that the deficiency may be on the moral side as well as the intellectual, and that a permanently lowered control over the animal tendencies may be the result of an attack of mania from which the patient has so far recovered that the intellectual faculties seem restored to their pristine vigour. It is noted "that persons with strong nervous inheritance sometimes pass through a series of nerve storms with comparatively little damage to their intellects, while others, less nervous, suffer much more severely from single attacks." To the former curious class should be restricted, we think, the name of "Recurrent Insanity."

In a very masterly chapter the relations of hypochondriasis and melancholia are discussed. Dr. Savage appears to incline to M. Littré's opinion that the egoistic group of feelings is based upon the instinct of self-preservation, having perhaps its fundamental note in the sensations we receive from the abdominal viscera. No doubt the perpetual occurrence of epigastric uneasiness with mental depression is very remarkable, and the morbid intensification of egoistic feeling in the hypochondriac and in the victim of melancholia seems only to differ in degree, nay, one of the latter conditions often merges insensibly into the other. Even the operations of the mind itself, tinged with the same intense egoism and self-concentration produce sensations of pain and distress very analogous to the commoner forms of hypochondriasis. This is well seen in that common symptom, psychical anæsthesia, when the patient makes it his bitterest complaint that his emotions are dulled, that he has lost all natural affection, that he cannot think like other people, and so on. The melancholic is afflicted by the appearance in consciousness of a host of sensations, physical and mental—"*Die sonst*," as Schüle quotes, "*die Götter*

gnädig bedeckten mit Nacht und mit Grauen?" Speaking of suicide our author emphatically confirms what has been before observed as to the frequency of hereditary tendency towards self-destruction.

There is a very full description in this work of general paralysis, a disease so interesting both as forming the connecting link between the provinces of the general physician and the specialist, and also as being an ailment having a short and more or less definite course which medical skill has not as yet been able to perceptibly influence. The several varieties are dealt with very minutely, and a number of clinical cases are described with a vigour of style and power of grasping and impressing salient points very characteristic and attractive. In this excellent chapter nothing is overlooked, though, as usual, little is quoted from others. The author's experience of general paralysis has been large, his study careful and minute, and without incumbering his pages with superfluous minutiæ or stock citations from previous writers, he has given an account of this interesting affection at once comprehensive in detail, scientific in spirit, and striking in presentation. As to causation, a just emphasis is laid on the influence of worry and anxiety, mental overstrain rather than mental overwork, in the production of this disease. It is satisfactory to find that Dr. Savage, like Dr. Mickle, distrusts that earlier crude pathology that would attribute general paralysis almost exclusively to sexual excess, an agency to the injurious effects of which some authors find it so easy to refer all forms of mental aberration, perhaps on the supposition that like the clown's answer to the Countess of Roussillon, and the barber's chair whereto he likened his reply—"it fits all men"—or that, *omne ignotum pro magnifico*, it must be a great cause for it is a cause of which we know nothing.

With regard to puerperal insanity we think the author goes too far in saying there is "absolutely nothing characteristic in the form which the insanity assumes." It would be better to say "nothing absolutely pathognomonic." Erotic excitement is enormously common, at least in the maniacal form, and mistakes as to identity are nearly always a prominent symptom both in the maniacal and melancholic.

At the close of a chapter on phthisis and insanity the occasional alternation between insanity and spasmodic asthma is mentioned, and illustrative cases are given. This alternation has been observed by Kelp, of Oldenburg, several years ago, and a paper on the subject from another hand has appeared since the publication of this book

in the journal of which Dr. Savage is an editor. Other interesting connexions of insanity are dealt with—insanity with kidney disease, with diabetes, with Graves' disease ("in Bethlem I have seen three fully developed cases of this disease connected with insanity"), and with myxœdema. The connexion of insanity with the last-named affection was first described in England by Dr. Savage, as also was the alternating relation of asthma to insanity.

The chapter on alcoholism and insanity is marked by the author's usual common sense and coolness of judgment. Intolerance of alcohol (*Intoleranz gegen Alkohol*) as a sign of nervous degeneration is hinted at, but this interesting condition has not received in this country the attention which it deserves. It is worthy of note, though it is not mentioned by our author, that this state may be brought about by constant alcoholic indulgence. A tendency to erotic ideas is mentioned as occurring in morphinism as well as in alcoholism. The general experience of other observers will hardly be found to confirm this remark in reference to either condition.

The book closes with excellent chapters on the responsibility of lunatics, and on the legal relationship of insanity. Here and there throughout the work there are signs of haste in writing, whereby perfect lucidity is occasionally interfered with. We are afraid that Mr. Matthew Arnold might take exception to the phrase in which a patient is described as being "one of the typical Englishmen of the middle classes, who devote every spare moment to improving their minds," but it is pleasant to think that Dr. Savage's experience of the middle classes is so much more favourable than that of another specialist, Dr. Sankey, who loftily states that "the professional class are, or should be, equal to the peer in intellectual work."

On the whole, Dr. Savage's manual must be most heartily recommended. It is neither too long and systematic for the general practitioner, who is anxious to obtain a comprehensive survey of mental affections, nor is it too brief and condensed for the student of medical psychology. The author never sinks the cultivated physician in the alienist. He is singularly free from crotchets and hobbies, and yet he is thoroughly original. He takes nothing for granted, and when he adopts current views it is not until they have been completely assimilated in his own mind. His book is marked by force of thought, directness of expression, and cool and balanced judment. Every page exhibits carefully digested experience and immense observation.

On the Nature and Treatment of Sporadic and Epidemic Cholera. By ALEXANDER HARKIN, M.D., F.R.C.S. London: W. Renshaw. 1885. Reprint. Pp. 18.

ALTHOUGH it is not customary for us to review a *brochure* which has already appeared in the pages of this Journal, yet the exigency of the times and the intrinsic value of Dr. Harkin's views on cholera seem to justify a departure from the rule. The terrible visitation which is at present devastating some of the fairest provinces of Spain may at any moment swoop down upon our own land, and any authoritative suggestions as to prevention or cure of the dreaded cholera morbus will be welcomed by all thoughtful physicians. Such will be found in Dr. Harkin's paper. He regards the disease as dependent upon a serious lesion of the great sympathetic—a system of nerves confessedly under the control of the pneumogastric, and his principle of treatment consists in stimulating the latter by an irritant, whether electric, galvanic, or a rapidly acting vesicant, applied over the site of its sheath in the cervical region, so as to develop its inhibitory powers, and thus control and suppress the exuberant activity of its ordinary antagonist, the great sympathetic.

Dr. Harkin's paper is illustrated by a series of striking cases, in which this line of treatment was successful, but we must refer our readers to the *brochure* itself, which will well repay perusal for its originality, even if the pathological and therapeutical doctrines advanced as to cholera do not gain immediate or universal acceptance.

Therapeutische Notizen der Deutschen medizinal Zeitung, 1880–1883. By Dr. J. GROSSER. Berlin. 1884.

THIS compilation contains references especially to the uses of the newer remedies, and condenses in small bulk a large amount of useful therapeutical information, together with many formulæ from approved sources.

Illustrations of Clinical Surgery. By JONATHAN HUTCHINSON, F.R.S., Consulting Surgeon to the London Hospital. London: J. & A. Churchill, 11 New Burlington-street. 1885.

AFTER a long interval we have again an issue of one of the fasciculi of this most interesting work. We are sorry, indeed, that the close of the second and concluding volume approaches, but we may hope that, after all, the original intention will not be rigorously

adhered to. The 17th number gives illustrations of fractures of the neck of the femur; lupus of mucoid surfaces; superficial forms of rodent cancer; and chancres in unusual positions.

There are some remarks on erratic chancres, which go to show in what curious places syphilis *sine coitu* may begin, and some persons whose morality has been doubted will derive consolation from the expression of opinion by so experienced a syphilographer that "the stories which we so often hear, as to infection at water-closets, &c., are, I doubt not, in exceptional cases, really true." In some memoranda in reference to erratic chancres, Mr. Hutchinson points out that induration is often absent, and that the diagnosis may be most difficult. The surgeon should in such cases carefully examine the lymphatic glands. The chancre which affects the nail-bed is scarcely ever indurated and often suppurates very freely. Another point to be remembered is that these chancres are often of enormous size. The accompanying illustrations are very good.

Surgical Operations. Part I. The Ligature of Arteries. By Sir William MacCormac, Surgeon, and Lecturer on Surgery, St. Thomas's Hospital. London: Smith, Elder & Co., 15 Waterloo-place. 1885.

This is the first part of a work on operative surgery from the pen of our distinguished fellow-countryman, Sir William MacCormac. We may safely say that so far as this may be regarded as a specimen of what is to follow, there is no book dealing with operations to equal it. The dress in which it is presented is a model to other authors and publishers, and we hope it will serve to stimulate competition in this direction. Many works now sent out are mainly remarkable for bad illustration, bad type, bad paper, and bad binding. In all these departments the part now before us eclipses what we are accustomed to in England in surgical or medical literature. The woodcuts are large and very finely executed, the paper is of superior quality, and the type and printing are excellent.

Having said so much of the book itself, we are glad to be able to speak as highly of the contents. The operative surgery of each artery is dealt with under these headings:—Indications, Anatomical Relations, Direction, Operation, Collateral Circulation. There is not much of what is called the literature of the subject, and there are no troublesome statistics; a few salient points of history are noted, and then the author goes into the particular

subject under consideration. The writing is clear and succinct. The book is sure to become most popular, and will largely add to the reputation of the author.

Journal of Cutaneous and Venereal Diseases. Edited by Drs. H. G. PIFFARD and P. A. MORROW. New York: W. Wood & Co. Vol. II. 1884.

THE second volume of this serial fully maintains the high position taken by it at its commencement, and does credit to the fostering care of its editors. Many interesting communications are to be found in its pages, and we may single out Unna's paper on the Theory of Perspiration as the most striking and original. A number of rare and curious cases are illustrated, some in colours—*e.g.*, disseminated cancer of the skin secondary to cancer of the breast, ichthyosis (alligator boy), fibroma molluscum, favus of the hand, fibro-sarcoma of the hand, tubercular leprosy, and an unusual case of psoriasis. Every practitioner is liable to be confronted with cases of cutaneous and venereal disease, and we can warmly recommend this Journal to all who desire to possess a convenient and practical summary of advances in the knowledge and treatment of these important classes of affections.

Materia Medica, Physiological and Applied. Vol. I. London: Trübner & Co.

WHAT are we to make of a ponderous tome of 726 pages, large octavo, purporting to be the first of a series of volumes upon materia medica, and yet dealing with only *six* drugs. How would our shelves groan under such a gigantic encyclopædia when completed, and who could find time to read its contents.

In the present volume Dr. Dudgeon treats of Aconitum, Dr. Hayward of Crotalus (rattlesnake), Dr. Drysdale of Kali Bichromicum, and Drs. F. Black and Hughes are responsible for the monographs on Digitalis, Nux Vomica, and Plumbum.

An able introduction, which treats of the philosophy of drug action, is from the joint pens of Drs. Drysdale, Dudgeon, Hayward, and Hughes, and in the special articles an amazing amount of labour has been spent in describing the symptomatology of the six drugs from a homœopathic point of view. Thus, no fewer than 2,254 symptoms are recorded in connexion with aconite alone, comment upon which we leave to the imagination of our readers.

PART III.

HALF-YEARLY REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.

By Ringrose Atkins, M.A., M.D.; Resident Medical Superintendent, District Lunatic Asylum, Waterford.

I. INSANITY IN GENERAL.

Asylum Recovery Rates as Tests of Efficiency.—Dr. T. A. Chapman (*Journ. Ment. Science*, July, 1884) adopts, in determining the question, the classes of Dr. Thurnam. Class I. First attack, and within three months. Class II. First attack, above three and within twelve months. Class III. Not first attack, and within twelve months. Class IV. Over twelve months, first or otherwise. He concludes, after an analysis of recent English statistics, that the gross recovery rate is quite useless as a gauge of the efficiency of an asylum. Since (1) the recovery rate varies directly as the proportions of Classes I. and III, (2) the recoveries in Class I. vary directly (in such cases as can be analysed) as the curability of the cases included in it; and (3) these results, based though they are on a very general analysis of cases, and masked by some obvious and many-suspected errors in the figures supplied, account for so large a proportion of the variations on the gross recovery rate that a complete analysis might be expected to so fully explain them that there would be a very narrow margin left due to efficiency; (4) that there is an appreciable presumption (not at all amounting to proof or demonstration) against the efficiency of large asylums; (5) that if there is not an absolute uniformity in the results obtained in different asylums, in view of the different classes of patients treated therein, the results are much closer to such uniformity than the usually stated recovery rates suggest. It should be remembered that a novice superintendent of an hospital for the insane has for his first few years a very large recovery rate, while the recovery rate of an honest veteran superintendent is a relatively small one. It is a question of diagnostic skill. Dr. Pliny Earle has done good service in pointing

out the elements of error in recovery rates. There can be no doubt that it is the drawing the distinction between "persons" and "cases" which determines the wide difference between recovery rates of different asylums.

Chronic Insanity and the Psychical Degenerations.—Dr. Magnan (*Gaz. des Hôpitaux*, April 22, 1884) states that chronic insanity (*délire chronique*) presents the following characteristics:—The affection has at first a period of incubation, which often passes unperceived. The patient is sad, the external world affects him painfully, and he is a victim of an anxiety which he cannot explain. Little by little his painful ideas take shape. Delusive conceptions arise, and become systematised. He is now persecuted. The psychical phenomena pursue a progressive march, and become more and more systematised; and across the domain of persecution ideas of satisfaction make their appearance, and gradually the persecutory ideas give place to those of importance, and the persecuted lunatic has delusions of importance. At length the patient's faculties become enfeebled, and in the general cerebral turmoil the delusions disappear, and the patient becomes a dement. This picture is an excellent one, except that in its first stage it does not go far enough, and in the last it goes too far. Dr. Magnan does not here describe a psychosis, but the evolution of systematised delusions; and the systematised delusion of grandeur sometimes passes through the converse stage to that which Dr. Magnan has described. Under the title of the psychical degenerations he describes a class of beings whose cerebral state is one of defect from their birth. Dr. Magnan says (in words of which the following previously-written citation from an American author is a pretty literal translation) that "in examining those defective states of the human mind, which are the frequent manifestations of an hereditary transmitted taint, it is found that they may be ranged in a serial chain, whose links are constituted by different forms of mental alienation merging insensibly into each other. One end of this chain is constituted by idiocy, the other by that perversion of the intellect called primary monomania (paranoia). On first sight these two conditions appear to be separated by an almost impassable chasm, and this from a psychological as well as from a strictly somatic point of view. No greater contrast could be exhibited within the walls of an asylum than by placing side by side an idiot and a lunatic with systematised projects and delusions. On the one hand, a state characterised by an utter absence of every higher mental co-ordination; on the other, one which exhibits intricate and varied

associations of the mental mechanisms analogous to those of the normal mind." In these cases there are often noticeable marks, which Morel called stigmata. At the bottom of the scale there are defects so gross as not to require citation—microcephaly, macrocephaly, plagiocephaly, &c. These stigmata are in more or less direct relation to the mental defect, and diminish as the patient rises in the intellectual scale; and in certain hereditary lunatics (paranoiacs) they must be looked for. They are cranial and facial asymmetry, excessive prognathism, deformed ears, deformed teeth, pigmentation of the fundus oculi, &c. In these paranoiacs, with at times surprising intellectual power, there exist strange intellectual defects. In many of these cases there occur impulses which have been elevated to the rank of monomanias, when in reality they are merely episodical phenomena of a constitutional defective condition. The following are the most common types—doubting insanity, agoraphobia, dipsomania, kleptomania, homicidal and suicidal impulses, onomatomania, arithomania, zoöphilomania (anti-vivisectionism). The sexual anomalies are so frequent that for the purposes of study he makes a special classification of them:—1st. The spinal cases: here the reflex is simple; the genito-spinal centre of Budge is alone in play (Onanism in the complete idiot). 2nd. Posterior cerebro-spinal cases; the first reflex passes from the posterior cerebral cortex and abuts on the cord. A patient has a venereal spasm on the sight of any human being. 3rd. Anterior cerebro-spinal cases; here the point of departure is from the anterior cerebral cortex; it is a sentiment, an idea, a *penchant* which may be affected. 4th. The psychical cases in which sexual pleasure is not felt.

In Dr. Magnan's opinion the victim of degeneration is not a lunatic, properly so called. In him the psychical phenomena are *bizarre*, and obey no particular law. In these cases there is no period of incubation; the ideas of persecution and grandeur come out pell-mell. However, this distinction cannot be maintained. In decidedly degenerated cases, the psychical phenomena have a regular evolution, and in vesanic cases allied to them the irregularity is marked.

On Alcohol in Asylums, chiefly as a Beverage.—Some time previous to the meeting of the British Medical Association in Belfast, last year, Dr. D. Hack Tuke sent circulars to the medical superintendents of the asylums in Great Britain, containing a series of questions relating to the use or disuse of stimulants on the health of the patients, and on the discipline of the institutions. The replies to

these questions he collated, and these, together with the inferences drawn therefrom, he brought forward at the meeting referred to, the paper being since published *in extenso* in the *Journal of Mental Science*, January, 1885. The following is Dr. Tuke's summary and conclusion :—

1. Out of the 129 county and borough asylums and registered hospitals in Great Britain and Ireland, I have been favoured with replies from 100. These returns comprise 53,855 patients out of 64,103, the total number in the asylums of the description just mentioned.

2. Of the 100 returns received, one-half report the non-use of alcoholics other than medicinally.

3. Among the 50 in which alcohol continues to be used, 8 superintendents express themselves strongly in favour of the retention of alcohol as a beverage ; and, doubtless, many hold the same view who have not expressed it. The presumption indeed is that in those asylums in which alcohol is used the superintendent approves of it rather than otherwise.

4. In regard to the 50 in which alcohol is disused, one superintendent has had his suspicions that this course has proved injurious, and another found the attempt endanger the peace of the household. Eight superintendents have observed no result, favourable or unfavourable. Thirty superintendents hold that they have observed very beneficial results from the course pursued. The improvement usually refers to both the patients and the discipline of the asylum. We have now 11 left, who make no comment, and in most of those cases the superintendent could not make any comparison, because alcoholics had never been given in the asylum.

5. With regard to a point of secondary, but not altogether insignificant, importance—the cost of alcoholics in asylums—I find that the cost per patient per annum (calculated upon the total expenditure for alcohol and the average number of patients resident) is 12 shillings for Great Britain and Ireland, being at the rate of 14 shillings for England and Wales, 8 shillings and 8 pence for Scotland, and 4 shillings and 8 pence for Ireland. The total expenditure in alcoholic drinks is about £32,000. This shows a marked decrease since 1878, when Dr. Brushfield made a similar calculation for England and Wales, and found it to be close upon 30 shillings per patient (£1 9s. 11¾d).

6. If we take the British asylums in which beer is given as a beverage, and no substitute is given to those patients who do not

take it, and no money allowance is granted to the attendants, the average annual cost per patient is £1 11s. 2d.

7. Taking, on the other hand, the asylums (12) in which neither patients nor attendants are allowed alcoholics as a beverage, and where no substitute or allowance is given, the average annual cost per patient is 2 shillings and 1 penny.

8. The cost of alcoholics is 3 shillings and 9 pence per annum per patient in the 50 asylums where they are not allowed as a beverage, but where substitutes are given to patients, and allowances to attendants, and including several cases where beer is occasionally given to attendants. This also includes the 12 asylums appearing above, where no alcoholics are allowed, and no substitute or allowance is given. In 16 of the non-alcoholic asylums, milk, tea, coffee, cocoa or beef-tea are given to the patients and attendants, and in 15 of these asylums a money allowance and, in 2, uniform are granted to attendants.

Dr. Tuke confesses that he was surprised to find that so many asylum superintendents, in England and Wales, had discontinued stimulants, other than medicinally ; and still less was he prepared to receive such strong expressions of opinion in favour of this course, both as regards the health of the patients and the increased order and discipline of the asylum. While sympathising with the feeling, that it is hard lines to cut off the poor man's beer, to which he has been accustomed all his life, he is of opinion that, in this question, if the health of the patients does not suffer, and the discipline of the asylum is better maintained, asylum authorities are fully justified in discontinuing the use of stimulants, other than medicinally, even if a few patients feel it to be a hardship. He hopes that superintendents will never be compelled to make the change, and that they will never do it, unless they honestly feel that it will be for the good of the institution under their care.

II. ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM.

The Neuroglia.—According to Gierke (*Neurol. Centralbl.*) the neuroglia is not to be classed with the connective-tissues, but has a peculiar place of its own in histology. We have to distinguish in it the intercellular substance and the cellular elements, or the unformed and the formed elements. The intercellular substance is especially abundant in the gray matter of the central nervous system, where it makes up about one-third of the entire mass, while in the white matter is found principally the formed elements

of the neuroglia. The intercellular substance is homogeneous and transparent as glass, similar to coagulated blood serum. The oft-mentioned threads and granules are artificial products. The formed elements consist of cells and their prolongations. Nuclei are found, if at all, only in small numbers, and never in form of granular masses. The prolongations of the cells attain a length of 0·4 mm. There are two kinds of cells—the one is almost filled by the large oval nucleus; the other contains a very minute nucleus. In the white substance of the spinal cord the cells and their prolongations form sheaths around every nerve fibre, while the intercellular substance of the neuroglia is absent. Fibrillary connective-tissue is not found in the white substance of the cord.

The Cerebellar Cortex.—Beevor (*Du Bois Raymonds Archiv.*) gives the following views on the histological structure of the cerebellar cortex:—

1. The layer of granules. Every Purkinje's cell is in relation with an undivided medullated nerve fibre. Beside the latter there are also other fibres which form a plexus and traverse the layer of granules in every direction, passing on one side into the white substance of the cerebellum, on the other into the molecular layer. These fibres are of very variable size, and anastomose freely with each other. The first-mentioned fibres pass through the latter without entering into any union with them. In the interspaces of the fibres of this layer are hæmatoxylin cells, which correspond to what were hitherto termed granules (Körner), but which are connective-tissue elements, and eosin cells, which are connected with nerve fibres. The hæmatoxylin cells, which are glia cells, with nuclei, protoplasm, and anastomosing prolongations, are found also between the nerve fibres of the white matter, and form a supporting medium like that in the white substance of the cord. The eosin cells seem to be only swellings of the axes cylinders.

2. The molecular layer. The intercellular substance seems to be composed of a fine network. Between the layer of granules and molecular layer Beevor describes a *limitans interna* composed of glia cells, which act as a support to the Purkinje's cells, and the nerve fibres and blood-vessels of the latter. The following is Beevor's scheme of the relations of the different parts:—Each undividing nerve fibre is in relation with one Purkinje's cell, its axis passing over into the protoplasm, its medullary sheath into the capsule of the cell. The axis cylinder divides within the cell into a number of fibrillæ, which again pass into the dividing prolonga-

tions of the cells. The fibrillæ run in distinct threads to the periphery. Through the division of the prolongations the fibrillæ at last become isolated. They then bend at an angle of 90° to spread over the surface, and to be again collected into fibres surrounded by medullary sheaths, which, after entering into various plexuses, run into the white matter of the cerebellum.

The Cerebellar Peduncles and the course of the Funiculi Graciles and Cuneati.—Vejas, of Corfu, has investigated in the laboratory of Prof. Forel, in Zurich, the anatomy of the cerebellar peduncles, following the method of Gudden.

1. He extirpated the right funiculi graciles and cuneati in a rabbit, and examined the result seventy-four days after the operation. He found an atrophy of the posterior columns of the cord on the side of the operation downward to the upper dorsal region. Above the lesion the fibræ arcuatæ of the right funiculi were greatly reduced in size, as was also the inner division of the right inferior cerebellar peduncle with the cells which it contains. The only atrophy on the left side was found in the inter-olivary tract, and this could be followed only as far as the corpus trapezoides. The olives and Deiters nucleus and the corpus restiforme were not affected. He concludes that the inner division of the inferior peduncle of the cerebellum derives its fibres chiefly from the funiculus cuneatus of the same side through the formatio reticularis. These fibres do not pass through the corpus restiforme, as Monakow supposed. They end in the ganglion tecti and not in the cerebellar hemispheres. The inter-olivary tract derives its fibres chiefly from the funiculi graciles of the opposite side.

2. He extirpated the right hemisphere of the cerebellum, including the dentate nucleus and the flocculus, and a portion of the right half of the vermiform lobe in a rat. Fifty-two days after the operation the following changes were found:—The right corpus restiforme, the right nucleus of Clarke (nucleus of the lateral column), and the left olive were greatly atrophied. The right superior peduncle of the cerebellum and the left nucleus were atrophied. The right middle peduncle of the cerebellum (right superficial half of pons) was totally atrophied, and its gray mass reduced in size, but no change was found in the cerebral peduncles. Thalami normal.

3. He extirpated a portion only of the right cerebellum in a rabbit—viz., the flocculus, and the right middle peduncle, with the accompanying portion of the nucleus dentatus. The vermiform lobe and the ganglion tecti were not injured. Seventy-two days after

the operation the brain was examined. The corpus restiforme and olive were not affected. The inner division of the inferior peduncle was preserved. The atrophy was confined to the superior and middle peduncles of the cerebellum on the right side, and to the red nucleus on the left side, but was less extensive than in the first case. From these results the following conclusions are drawn:—The corpus restiforme is made up (*a*) of the direct cerebellar column from the cord; (*b*) of the tract from the olive of the opposite side; (*c*) of a mass of fibres which come from the nucleus of the lateral column which lies in the formatio reticularis. It does not contain any fibres from the posterior columns of the cord or their funiculi. Its ending is not known, but it does not decussate with the opposite corpus restiforme in the cerebellum. The inner divisions of the inferior peduncle is independent of the corpus restiforme, and is made up chiefly of fibres from the nucleus cuneatus of the same side. It also receives some fibres from the formatio reticularis. It ends in the ganglion tecti, and possibly decussates within the cerebellum. The superior cerebellar peduncle arises from all parts of the cerebellar cortex, but not from the vermiform lobe. It ends in the red nucleus of the opposite side. The middle peduncle of the cerebellum does not contain any commissural fibres between the cerebellar hemispheres. It arises from all parts of the cerebellum. It passes to the grey matter in the ventrad half of the pons, each hemisphere being joined with both halves of the pons. A part only of the fibres, therefore, cross the median line. The fibres end in the gray masses of the pons. There is no direct connexion between the cerebellum and cerebrum All fibres from one end in nuclei, whence new fibres leave to pass to the other. These way stations are the grey masses of the pons, and the red nucleus of the tegumentum. The results of the author are compared with those of other observers in the original article which is to be found in the *Archiv fur Psychiatrie*, XVI., p. 200.

The Destination of the Posterior Columns of the Cord.—Edinger has investigated the course of the fibres from the posterior columns of the cord upwards into the medulla oblongata in fœtuses at the eighth month. At that time the fibres are medullated, while the fibres from the olivary bodies are still without sheaths; hence the two sets can be distinguished from each other. He finds that the fibres from the columns of Burdach and Goll take two courses. The greater number pass ventrad of the central canal, and cross to the opposite side to form the inter-olivary tract. This decussation, known

as the sensory, to distinguish it from the pyramidal or motor, continues higher than is usually described, the last fibres to cross passing from the termination of the posterior columns as high as the middle of the vagus nucleus. These upper fibres form a portion of the fibræ arcuatæ internæ, which go through the formatio reticularis. They pass through the olivary body of the side from which they come, but do not enter into any relation with it. The olivary body is not connected with the posterior columns. The smaller number of fibres turn directly outward from the termination of the posterior columns, and enter the restiform body, and thus go to the cerebellum. They come exclusively from the column of Goll. They pass to the vermiform lobe of the cerebellum, being joined on their way by fibres which arise in the acoustic and trigeminal nuclei, and by the direct cerebellar column of the cord. The fibres which come from the opposite olivary body into the corpus restiforme pass to the hemispheres of the cerebellum, and not to the vermiform lobe.—(*Neurolog. Centralbl.; Am. Journ. Nerv. and Ment. Dis.*)

The Corpus Callosum.—Hamilton (*Edinburgh Clinical and Pathological Journal*, June 7, 1884) has given us some new views of the anatomical relations of the corpus callosum. The view generally accepted that it contains commissural fibres connecting symmetrical parts of the two hemispheres is almost altogether rejected by him. His method of examination is as follows:—Brain is hardened, and then cut into perpendicular sections, one half an inch in thickness. These sections are frozen, and the surfaces polished. He states that the course of the fibres is then marked out with almost the same clearness as the grain in a piece of polished mahogany. Hamilton states that the fibres of the corpus callosum after they have arrived at the opposite side of the brain pass downward, some into the internal capsule, to become united chiefly with the optic thalamus, in small part with the head of the caudate nucleus, and perhaps in part with the pons and medulla; others into the external capsule, which pass later into the optic thalami, olfactory tracts, and temporal lobes. It must be said, however, that these views, so contrary to what has been usually taught, and to what physiological considerations appear to demand, are not likely to obtain much credence.—(*Am. Journ.*)

The Functions of the Cerebellum.—Professor Luciani has made a series of experiments upon this subject. The animals used were dogs. He kept alive a dog for eight months in which he had almost completely removed the cerebellum. At the *post-mortem*, the flocculi, the truncated peduncles, and the degenerated remains of the

inferior vermiform process were the only portions to be seen. There were three periods in the phenomena presented by the animal. Immediately after the operation there was inco-ordination of all the voluntary movements, so that the animal could not stand, walk, swim, or feed itself. Every attempt to move threw the limbs into a state of tonic extension, and caused strong contraction of the extensors of the vertebral column and of the head, with a tendency to fall backwards. These symptoms are ascribed by Prof. Luciani to irritation, and not to loss of the cerebellum. About two months after the operation the second period of the phenomena began, and lasted about four months. The inco-ordination disappeared in swimming, and a special form of ataxy showed itself in standing, walking, and in isolated voluntary acts. The muscular movements lacked steadiness and force, and there was a constant clonic motion, but not so much as to prevent the performance even of intentional acts. When the power of walking was first regained, the animal would fall after a few steps. Later, a fall was avoided by spreading out the paws. The essential condition in the cerebellar ataxy appeared to be lack of tone and deficient muscular energy. The third period, lasting about two months, was characterised by nutritive disturbances, as suppurative inflammation of the middle and external ear on both sides, with catarrhal conjunctivitis, due in part, at any rate, to external irritants. Rapid failure of nutrition ensued, and at the end marasmus. After death all the remaining portions of the nervous system were found to be perfectly normal. In another dog he removed the right half of the cerebellum. Afterwards he extirpated the sigmoid gyri. After this operation the left half of the cerebellum was removed. The extirpation of the sigmoid gyri caused a greater amount of paresis of all the limbs than occurs from the same cause in dogs having the cerebellum uninjured. From these facts Prof. Luciani draws the conclusion that the cerebellum does not lie in the path of the centrifugal fibres from the brain to the spinal cord; that the inco-ordination is due to the irritation of the peduncles, and that the ataxy represents the disorder due to the loss of the cerebellum; that the function of the cerebellum is not to co-ordinate movements, whether co-ordination be understood as an elaboration of voluntary impulses or as a reflex muscular adaptation. According to him the cerebellum "is a central organ, on which depend the tone and a great part of the disposable nervous energy of the motor elements of the muscles." He also discovered that each half of the cerebellum influences both sides of the body. Prof.

Luciani holds that the cerebellum is an organ physiologically one, that it is not, as Ferrier holds, a complex of several organs.—(*Lond. Med. Record*, June, 1884.)

The Cerebral Circulation.—Under the direction of Prof. Morselli, Drs. Bergesio and G. Musso have made experiments upon a patient who had lost a portion of his skull. They used the method proposed by Mosso, and studied the effect of drugs upon the brain. Morphia and alcohol caused cerebral congestion. Paraldehyde was followed by an anæmia of the brain. These agents do not cause sleep by any effect upon the cerebral circulation.—(*Lo. Sperimentale.*)

On Sensorial Localisations in the Cortex Cerebri.—Prof. Luciani publishes in *Brain* (Part XXIV.) the results of his careful experiments upon sensory localisation. They are as follows:—

1. Disturbances of vision follow extirpation of the cortex of the parietal, temporal, and frontal lobes as well as of the occipital lobes, but permanent loss of sight occurs only when the occipital and adjacent parts of the parietal lobes are destroyed. Small lesions in other parts than the visual area may not produce even temporary disturbances of vision. The visual area is therefore limited to the parieto-occipital region. In dogs and monkeys the optic decussation is partial, hence lesion of one occipital lobe produces in these animals bilateral homonymous hemianopsia. A connexion between a definite part of the retinæ and a definite part of the visual area could not be proven. The visual area thus described is somewhat more extensive than that of Munk. Total extirpation of both occipital lobes produces absolute blindness at first, but, later, this is replaced by psychical blindness (Seelenblindheit). The dog avoids obstacles in walking but does not recognise any previously familiar object. It therefore follows that the cortical arc is not the seat of sensation, but in it the sensations are perceived, compared, mentally arranged, and remembered. The function of the cortex is to elaborate psychically the visual sensations which take place in the mesencephalic ganglia.

2. The auditory area is located in the temporal lobe, each ear being connected with both hemispheres. Disturbances of hearing may be caused by lesions in the adjacent parts of the parietal and frontal lobes, and in the cornu ammonis, but these are not permanent. Psychical deafness follows extirpation of both temporal lobes, but absolute deafness is not permanent.

3. The seat of the olfactory area is in the gyrus hippocampi and cornu ammonis, but also extends into the temporal lobe.

4. The location of gustatory sensations is not determined, but is probably near that of the olfactory.

5. The sensations of touch are perceived in the central convolutions, and, therefore, lesions of these cause anæsthesia as well as paralysis. The tactile area includes the parietal convolutions also, but does not reach the occipital or temporal lobes. All the sensations appear to have a common zone in the parietal region, and lesions in this zone may cause disturbance of all the senses.

It will be seen from this review that these experiments of Luciani confirm those of Munk as opposed to Goltz. It is also to be noted that all experimenters, except Ferrier, now agree that the motor and tactile areas coincide to a great extent. The position held by Ferrier that tactile sensations are perceived in the cornu ammonis has not been confirmed either by experiment or by pathological observation, and may be abandoned. It is probable that in experimenting on the cornu ammonis, Ferrier wounded the tegumentum of the crus which lies so near to it, and in which pass the sensory tracts, and that, for this reason, his conclusions were fallacious.—(*Am. Journ.*)

(To be concluded.)

THE CHIN REFLEX.—A NEW CLINICAL OBSERVATION.

In the winter of 1882, while examining, at the Infirmary for Nervous Diseases connected with the Orthopædic Hospital, Philadelphia, a case of section of the inferior dental nerve, Dr. Morris J. Lewis discovered a new reflex. [For report of case see *Philadel. Med. News*, March 11, 1882.] This consists of a sudden elevation of the lower jaw immediately following a blow upon the lower teeth, or chin, and is most easily produced by striking the parts mentioned in a downward direction with a rubber plexor. The mouth of the patient is of necessity open, and the muscles should be relaxed. Since then he has observed this symptom in two cases of spastic paralysis, one case of congestion of the spinal cord, one of cerebral tumour, probably specific, one of hemiplegia, one of unilateral tumour of doubtful origin, and occasionally in perfectly healthy individuals. In some of these the reflex was plainly due to a contraction of the temporal muscles, while in others the masseters seemed to be mainly instrumental in causing it. The clinical significance of this symptom is not as yet clear, but Dr. Lewis wishes to place it upon record, and to direct attention to it, hoping later to be able to report more fully. Gowers, in his "Diseases of the Spinal Cord," mentions that irritation of the skin in the interscapular region gives us the highest reflex available; the *chin reflex* is, therefore, of considerable interest, as being, as far as Dr. Lewis is aware, *the highest deep reflex yet discovered.*— *The Polyclinic*, June 15, 1885.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ACADEMY OF MEDICINE IN IRELAND.

President—J. T. Banks, M.D.
General Secretary—W. Thomson, M.D.

SUB-SECTION OF STATE MEDICINE.

Chairman—J. W. Moore, M.D. Univ. Dubl., F.K.Q.C.P.
Secretary—H. C. Tweedy, M.D. Univ. Dubl., M.K.Q.C.P.

Thursday, April 16, 1885.

Dr. J. W. Moore in the Chair.

On the Results of the Application of the Laws relating to the Adulteration of Food and Drugs in Dublin.

Dr. C. A. Cameron stated that the first Act relating to adulteration of food and drugs had been passed in 1860, through the influence of Mr. Scholefield. Only three public analysts were appointed under the provisions—Dr. Letheby, by the Corporation of London; Dr. Bell, by that of Birmingham; and the author, by that of Dublin. With the exception of Dr. Bell, the author was now the senior public analyst in the United Kingdom. The Act of 1860 was not put into force in any town save Dublin. In 1862 a public analyst was appointed, and the following year the clerks of the markets collected articles for analysis, and several of them were found to be adulterated, and the vendors were successfully prosecuted. The defects in the Act were, however, conspicuous. No officers could be appointed under it whose sole duty it would be to act as food inspectors. The fines levied for breaches of the Act were payable into the Imperial Treasury instead of into that of the local authority charged with the execution of the Act. The seller of the inspected articles had the option of accompanying the purchaser to the analyst—obviously a privilege which, in the case of country districts, prevented the Act from being worked. Notwithstanding its many defects, this Act

was worked in Dublin for ten years, and was the means of putting an end to the practice of adulterating many of the articles of food in common use. A very large number of convictions for the sale of adulterated articles were obtained in Dublin.

In 1872 another Act was passed which enabled local authorities to appoint food inspectors to collect articles for analysis. A defect in the first Act was remedied—namely, appointing the Courts of Quarter Sessions instead of Grand Juries in Ireland to be the appointing authorities. In England the Courts of Quarter Sessions are fiscal bodies and the Grand Juries are not, while in Ireland the Grand Juries are fiscal bodies. By the Act of 1860 the Irish Courts of Quarter Sessions could appoint but could not pay public analysts. Only one court made an appointment—namely, that of the County of Dublin.

In 1875 a third Act was passed. It repealed the section enabling the vendor to accompany the purchaser to the analyst. This alteration enabled the Grand Juries of the County to appoint analysts in cities outside of the counties.

In Dublin these Acts have, on the whole, worked fairly. At first it was found that bread, flour, tea, coffee, mustard, sweetmeats, and milk were largely adulterated. Now, with the exception of milk, it would be difficult to find an adulterated article in Dublin.

The CHAIRMAN inquired whether Dr. Cameron had met with many cases of adulterated butter, instancing butterine and bosch butter.

DR. CAMERON said there was a great deal of bosch butter sold; but within the last few years a new form of adulteration had been introduced by incorporating water in the butter. Quite recently, in Drogheda and Newry, there were cases in which 45 per cent. of water had been incorporated.

DR. WRIGHT, speaking from personal knowledge, said there were a great many instances of adulterated drugs having been supplied to dispensaries.

DR. CAMERON said he too had met with many cases of adulterated drugs.

MR. STRAHAN, adverting to the adulteration of milk in the city, mentioned a case in which a lady who resided at Drumcondra about twelve months ago, having found fault with the milk she was getting, made a change, but no sooner had she partaken of the fresh milk, than her stomach became sick, and she had a miscarriage in twenty-four hours.

MR. J. KNOX DENHAM considered that many of the stomach disorders among children were due to eating adulterated sweets, especially sugar-stick which was hawked about by rag gatherers. He instanced a case in which a woman, convicted of selling butterine for butter without notice, recovered £100 damages from the merchant who sold to herself the butterine as butter.

DR. MACDOWEL COSGRAVE stated that, when in Huddersfield, he found

that a great many traders were convicted for adding salt to the beer—a practice that was adopted at dinner hour, when the mill hands were set free. He asked whether that practice existed in Dublin, and whether whisky was adulterated.

Dr. Henry Kennedy said he had frequently seen children whose illness he could attribute to nothing but adulterated sweets. He believed plaster-of-Paris entered largely into their composition, especially into that of almond sweets, and that the colouring matter was also deleterious. The only pure sweet, in his opinion, was sugar barley. However, as he had seen Dr. Cameron's certificate of pure sweets, he asked whether there were any sweets really pure, in the proper sense of the term. As to milk, he had seen white powder in it, and the specific gravity being made up in a way that he could not explain, and he had heard that calves' brains were mixed with milk. What the adulterants other than water were he was anxious to know, both with regard to milk and butter.

The Chairman considered that vermilion was more likely to cause obstinate diarrhœa than any other symptom of mercurialisation, and that possibly the great fatality of diarrhœa in Dublin was, to a certain extent, due to the enormous indulgence by children in sweets. Of sweets, one of the safest was the crystalline sugar-candy, the crystals being unlikely to take up obnoxious or adulterant matter.

Dr. Montgomery inquired the cause of the deterioration in the quality of butter. Whether from adulteration or the mode of feeding milch cows, it was exceedingly difficult to get eatable butter now compared with fifteen or twenty years ago.

Dr. Cameron, in reply, said it was perfectly true that a great deal of adulteration was practised in drugs, and many were spurious, especially bark preparations. He met an instance of sulphate of cinchonin being sold as sulphate of quinine, and audaciously labelled "Howard's." In the United Kingdom an enormous adulteration was practised in butter. When a small quantity of butter was used to sophisticate pure butter, it was difficult to state positively that the butter was not pure. The way in which the adulteration of butter by butterine was arrived at was a curious one. In all kinds of fats there were certain quantities of fatty acids, soluble in water. As the result of analysis, it was found that not more than 3 per cent. of the fatty acids in suet and lard dissolved in water, whereas 7 or 8 per cent. of butter fats dissolved. Therefore, when he got less than 3 per cent. there must be the common fats present, not butter fats; and similarly, when he got 6 or 7 per cent., there was pure butter. Butter fats were peculiarly constituted, being physiologically intended to be eaten raw, whereas the others were intended to be eaten cooked. As a popular test, in warm weather butterine was much firmer than pure butter. Butterine rolls cracked across, but butter was plastic, and hence the more brittle the roll the greater the amount of

butterine fats. He believed there was a great deal of butterine adulteration, and as public analyst he was most anxious to put a stop to it. But Dr. Montgomery's complaint pointed to another defect—and that was, the complete carelessness in the manufacture of butter. From his early days he knew a good deal about experimental farming, which he studied at the Albert Model Farm, and he had written on the butter manufacture. Speaking from a knowledge of the subject, he stated advisedly there was no worse butter made in the world than in Ireland. There was a total disregard of cleanliness, and the salt used was extremely bad. In the west of Ireland he positively saw milk put under the bed to set for cream, that place being chosen to protect it from the fowl, and perhaps to increase the quantity, though not the quality. The only way to improve the butter was to establish butter factories, as in America and in Denmark. It was a common practice with the large farmers in Denmark to get milk from the smaller ones, and, having extracted the cream, return the skimmed milk for food purposes. But a different system prevailed in Ireland. There were a great many small farmers, and no proper dairies. Pedlars went round and collected small quantities of butter, which they mixed up together to make it homogeneous. Therefore, the bad manufacture accounted for the bad quality of the Irish butter. The brains theory of adulterated milk had been long ago exploded, being impossible to carry out. There was little adulteration practised except with water. He found flour seldom, sugar occasionally, and salt frequently, and not long ago he found rice, flour, sugar, salt, skimmed milk, and "fore-milk," which was the milk first drawn from the cow, the strippings being kept to manufacture into butter. There was no adulteration of sweets at present in Dublin. He had analysed hundreds of specimens during the last four years, without finding plaster-of-Paris, white clay, or poisonous pigments. The yellow was from saffron, and the pink from carmine. He found the yellow stuff sold in the street to be composed of a small quantity of honey, and sugar, and flour. Eating large quantities of sweets and diarrhœa resulting did not prove that the sweets must be adulterated. Pastry made children and adults ill. The only question was, whether the raw flour in the cheaper kinds of confectionery might not produce some bad effects. But the common sugarstick was nothing more than sugar partly candied by being heated in an iron pot and rolled upon a flag. Comfits were perfectly pure at present. Several times he found salt in beer, but not so often here as in England. A low-class beer was manufactured from molasses. Having had the misfortune to certify that an article sold near Belfast was a debased, spurious production from molasses, deficient in solids, and containing little or none of the extract of barley, the vendor was fined £50—a conviction which was confirmed on appeal.

PATHOLOGICAL SECTION.

President—A. W. Foot, M.D.
Sectional Secretary—P. S. Abraham, F.R.C.S.I.

Friday, April 17, 1885.

The President in the Chair.

Renal Sarcoma.

Professor Walter Smith exhibited a renal tumour of a sarcomatous character and great size. The disease was of considerable rarity. Amongst its most remarkable features were the areolar appearance of a part of the surface, the quantity of mucin, and the comparative absence of hæmorrhage. The liver presented amyloid degeneration.

Dissecting Aneurysm of Shekleton. By Dr. Magee Finny.

Dr. Finny exhibited a typical specimen of Shekleton's dissecting aneurysm. It commenced in the thoracic aorta, about two inches above the diaphragm, and dissected between the laminæ of the middle coat, along the anterior two-thirds of the vessel, its whole length, and down both common iliacs with the most exact symmetry to their termination, where, through a small aperture ($\frac{1}{4}$ inch in diameter) at the junction of the external iliac branch, the sac again communicated with the normal arterial channel. The aorta and the iliacs were thus divided into double tubes, the aneurysmal tube being much the larger, and from it sprang the most of the abdominal arteries—the right renal, the spermatic, the inferior mesenteric. The aneurysmal sac was lined with a smooth membrane, which seemed continuous at either orifice with the lining membrane of the aorta. In addition to this dissecting aneurysm, two sacculated aneurysms sprang from the anterior wall of the sac—one in the thorax, $2\frac{1}{2}$ inches long by $1\frac{1}{4}$ broad, which lay two inches above the primary opening from the aorta into the sac; and the other—a very large one ($3\frac{3}{4}$ by $2\frac{1}{4}$ inch, and 5 inches in circumference), which extended from below the cœliac axis to the bifurcation of the aorta.

Both these aneurysms were firmly consolidated by layers of white fibrin.

There was also a true aneurysm of the trunk of the cœliac axis, which was also completely blocked with similar laminæ of fibrin, and but one branch of the axis—namely, the coronary—was pervious for the transmission of blood.

The specimen was removed from the body of a man, aged forty-three, who died in Sir Patrick Dun's Hospital last February, of the effects of

apoplexy and right hemiplegia, of which he had had two attacks—one in September, 1884, and the second in December.

The patient had been under Dr. Finny's observation for a year and a half before his death, and had been admitted to hospital in the first instance, in September, 1883, with the symptoms and signs of sacculated aneurysm of the abdominal aorta. There was no history of syphilis, rheumatism, intemperance, or of injury to cause the disease, and the kidneys seemed to be healthy at that time, as there was an absence of albumen, or of other symptoms of Bright's disease.

The patient was placed on Tufnell's treatment, and for four months maintained the horizontal position. In a short time he experienced relief, and then freedom from all the subjective symptoms, and later on it was evident that the aneurysm was cured by consolidation.

The patient recovered sufficiently to walk about, free from all pain or distress; he gained in weight and flesh, and went back to his occupation, as a tailor, six months after the aneurysm was first detected and treated.

There was no idea, however, that all this time he was the subject of a dissecting aneurysm of very great dimensions, as neither during the time he was under observation was there any evidence of any disease, other than the sacculated aneurysm, nor before nor subsequent to that time were there any symptoms to mark its advent in the first instance.

It is, therefore, quite unknown how long such a condition may have existed, and there were no data to guide one in formulating an opinion as to the possibilities of a prolonged life, had not the cardiac hypertrophy, and probably extensive arterial disease in the vessels of the brain, brought on the apoplexy which terminated life.

Of the three varieties or degrees of dissecting aneurysm, that described by Shekleton ("Dubl. Hosp. Reports," Vol. III.) is the rarest. Of the total number of all kinds recorded, which amounts to but 95 or 96, there are not more than 10 of Shekleton's variety, while in extent and position there are but five or six which resemble that now exhibited. It is very probable that this number does not truly represent the frequency and the relative proportion of this class, as there seems no reason why life should not be maintained without any reference to or detriment from the aneurysm, so long as the blood can re-enter the arterial channel; and as Shekleton's two cases, and many of the best specimens since then, of this form of dissecting aneurysm have been accidentally discovered in subjects of an anatomical school, or as similarly in my case, it is very probable that many cases occur which are quite unrecognised.

In all the cases in which a life-history is attainable, it is remarkable how accurately defined is the moment of the commencement of the dissection, and how short life is prolonged, should the patient survive the immediate shock. It is also remarkable that, in all such instances,

the primary rupture from the aorta is described as a "rent," a "slit," or "as if cut by a knife."

On the other hand, in all the cases which I have been enabled to examine, where this form of dissecting aneurysm has been accidentally discovered after death, the aperture (as in my case) does not conform to the description given above, but is large and wide, and bordered by a hard or calcareous edge.

To the primary formation of the dissection, as to whether it is by a sudden rupture on the one hand, or by a gradual yielding of the inner and middle coats on the other, we are justified in attributing the differences in the life-history and in its duration of each case.

The PRESIDENT asked Dr. Finny did he consider that, in the case of a dissecting aneurysm, any grounds could present themselves for forming a diagnosis? According to his experience, cases of the sort generally turned up as pathological surprises.

MR. TUFNELL said he would mention two cases to show the permanent character of the consolidation of aneurysms that could be accomplished. The treatment, in the case of a lady, was applied four or five years ago, and the lady was now perfectly well. The other case had a traumatic origin. On the 7th of April, 1878, a tall, delicate young man, who had recently suffered from primary and secondary symptoms, and had been under mercurial treatment, consulted him about a painful beating in his belly. He told him that he was a butcher's assistant, and that while he was at work in a shop an explosion of gas took place, by which he was blown up to the ceiling, and a good deal hurt; however, he soon afterwards went to work. A week afterwards, while he was endeavouring to hang up a side of beef, it came back upon him. He felt exhausted by his efforts, but tried again, and after a great struggle got up the side of beef on the hook. Then he felt very faint. Some days afterwards he was attacked with great pain in his stomach and shivering. Nevertheless, he worked on for a fortnight, until he could bear the pain no longer, and then he noticed the beating in his belly, the surface of which had become sore to the touch. When he (Mr. Tufnell) saw him, he found in his abdomen a circular tumour, which could be almost grasped. There were distensile pulsations, which were visible to the eye, and affected the surface for two inches round the tumour in every direction. There was also a *bruit-de-souffle*, which disappeared when he stood erect. Dr. Gordon had previously seen him, and found the same conditions. On the 12th of April the treatment by recumbency was commenced, and it was continued until the 26th of May, when he was allowed to get up. No medicine was given to him during the interval, only enemata of turpentine and assafœtida were administered to relieve his bowels. The pain, which was very severe at first, subsided very rapidly within a few days after he was put lying in the horizontal position. On the 9th of June

he was able to go out of town, and he came back on the 14th. There was then no dilating tumour to be seen, or bruit heard, nor were there any aortic symptoms beyond a solid mass in the place where the aneurysmal tumour had been. He (Mr. Tufnell) had no doubt that the aneurysm was caused while the man was endeavouring to hang up the beef, his spine being then bent in such a way as to make the abdominal conditions most favourable for the rupture. The total period of recumbency was forty-four days. This young man was now in New Zealand, in excellent health, and able to follow his business. With regard to the mode of treatment in question, its only fault was its simplicity, for it consisted merely in position. If an abdominal or thoracic aneurysm were in the posterior wall of the vessel, there would be no sac, and it would be a dissecting aneurysm. But if it were in the anterior wall, as long as the individual maintained an upright position the blood would enter from above downwards, and keep the sac full, and the action of the heart behind being added, there would be no chance of the aneurysm getting well. But when a lying position was assumed the conditions were reversed. The action of the heart was reduced by about thirty beats per minute, which amounted to 43,000 in the day. The blood would enter from below upwards, and consequently against gravity; and if the blood had any fibrinating power, the deposition of layers of it would commence in a few days, and the sac would gradually be replaced by a solid mass.

Dr. Henry Kennedy observed that pressure had been very successfully applied for the cure of aneurysm. He wished to ask Dr. Finny two questions—namely, had the patient Cheyne-Stokes' respiration, and were there any evidences of fatty degeneration?

Professor Finny, in reply, said he believed, as a rule, dissecting aneurysm afforded no grounds for diagnosis. He knew of only one case of the kind, in which a diagnosis was made and confirmed after death, and that was the one described by Dr. Swaine, where the lesion suddenly occurred in the upper part of the aorta, close to the termination of the left subclavian, and the patient was affected by shock and collapse. The aneurysm was a dissecting one, and had made its way down in such a way as to obstruct the course of the iliac vessels, so that the circulation in the patient's legs was stopped. The diagnosis that had occurred was confirmed by a subsequent partial restoration of heat and circulation in the lower extremities. As to Cheyne-Stokes' respiration, it was well recognised that that affection was not connected with cases of fatty heart alone, but was frequently found in cases where there was no fatty heart. It was neurotic in its character, and occurred in various forms of fever, as well as in cases of fatty heart and atheromatous disease of the arteries. In the case which he had just submitted to the section, there was no fatty disease of the heart or surrounding vessels.

Sublingual Epithelioma.

Mr. Kendal Franks exhibited a tumour, excised in the Adelaide Hospital, on the 5th of March, from a man, aged forty years. The tumour, which was an epithelioma, was first noticed as a small sore, at the root of the frenum linguæ, towards the end of last October. By the end of December it had extended downwards, so as to cause a hard lump beneath the chin, and in January the skin over it became involved. About the middle of January it had extended to the gum, in front of the symphysis menti. The lower incisor teeth loosened and became very tender. The man, when admitted, was suffering acute pain in the jaw and teeth, and neuralgic pains all over the head. He had lost sleep and flesh, and urgently requested an operation to relieve him. Accordingly, on the 5th of March, Mr. Kendal Franks excised the growth, and with it the involved skin, the middle portion of the lower jaw, from the facial groove, on one side, to a corresponding point on the other, and the entire tongue, involving all its attachments, down to the hyoid bone. The patient made an uninterrupted recovery, and left the hospital on the 14th of April, the wound nearly healed, and without any appearance, so far, of a return of the disease. There were no glands involved. The tumour, which was the size of an ordinary orange, presented on section a dense white structure, which the microscope showed to be an epithelioma. It sent fan-shaped processes upwards into the tongue, none of which, however, reached the surface. In front it had completely eroded the central portion of the lower jaw, so that the two sides were freely movable. Mr. Franks drew attention to the rapid growth of the disease, to the unusual direction in which it had extended, and to the great relief afforded by operation, though he scarcely hoped that there would not be a return of the disease later on.

The President asked did any power of speech remain to the man after the removal of his tongue?

Mr. Abraham observed that it was remarkable how little the growth had invaded the mucous membrane of the mouth and tongue. It seemed to have gone directly inwards, and formed a hard, solid tumour in the substance of the base of the tongue.

Professor Stokes said the patient was for a considerable time under his care in the Richmond Hospital, and he wished to know what was his actual condition at present, and were there any evidences of a return of the disease? He (Professor Stokes) declined to operate in the case for several reasons. The skin and the tongue were extensively engaged, the glands were also invaded, and there was a sublingual tumour; and besides, when the patient was in the Richmond Hospital he did not suffer such extreme pain, and his life was not such a burden to him as Dr. Franks had described. The tumour was also slow-growing, and did not show much

evidence of increasing. It was interesting to learn that the operation had been successful; but the great question, after all, was how far were operations justifiable in such cases, knowing as they did the extreme rapidity with which the disease returned?

Dr. Franks, in reply, said the man's powers of speech were now decidedly bad—worse than they were before the operation. They knew, however, that in cases of excision of the tongue, when the patients lived long enough, they often recovered their powers of speech in a most marvellous manner. But in the case in question the man was better pleased without his tongue than he was before the removal of it. He could not consider the tumour to be slow-growing, when it reached the dimensions it attained between last October and the beginning of last March. The circumstances which led him (Dr. Franks) to operate were these:—In the first instance the man came several times to the out-patients' department, there not being room for him in the hospital. He (Dr. Franks) told him that he did not consider his case suitable for an operation, but the man begged to be taken into hospital, and to have some operation performed on him that would relieve him of the pain he was suffering. Then he was taken into the hospital, and had no rest or sleep, but lay awake all night. He (Dr. Franks) explained to him that he would either die under the operation, or that the disease would return afterwards, and he made the same statement to his wife. She objected to an operation being performed, but the man himself begged for it, as the pain he was suffering was unendurable. His present condition, to a great extent, justified the operation. He was comparatively free from pain, and slept well, and as yet there were no signs of a return of the disease. The only thing that distressed him was his longing for solid food, which he could not take. He (Dr. Franks) was convinced, however, that the disease would return; but if it did, the probability was that the man would die quietly and without suffering.

Suicidal Wound in the Throat.

Professor Stokes brought forward a case of a suicidal wound in the throat, and exhibited the head and neck of the subject of it. He was a man, fifty-five years of age, the possessor of a somewhat large farm, near Balbriggan, and in very comfortable circumstances. The only person who lived with him was a female house-keeper, who was also his mistress. The latter fact was not, for a time, known to the woman's relatives, but when they discovered it they took steps to make the man marry her, to which he made no objection. Arrangements were made for the marriage, but, from one cause or other, it was delayed. On a Sunday, towards the end of last January, he did not appear at church, or elsewhere, and his friends and relatives went to his house to look for him. They found the door locked, and no sign of anyone. They went

away, and, after some hours, returned again and found the door still locked. They broke it open, and, on going to a garret, found the unfortunate woman, lying on her face, dead, with her throat cut from ear to ear. Close beside her lay the man, also dead, he having committed suicide by cutting his own throat. He lay on his face, and grasped in his hand was a small penknife, the blade of which was still in his neck. He had never previously shown any signs of violence or eccentricity. The gentleman who had furnished him (Professor Stokes) with the specimen wrote, saying that the deceased was a "distant man, who did not care much for society, but, in fact, rather avoided it, while, at the same time, he was not quarrelsome or a disagreeable neighbour." One of the remarkable circumstances of the case was that, when his body was discovered, the penknife was so tightly grasped in his fingers that it was only by pulling them out that it could be released. Another was the extraordinary magnitude of the wound, and the depth to which it was carried, without any injury being done to the cervical vessels. The man must have made two or three cuts at each side. He believed that death was not caused by the hæmorrhage—though a great deal of blood was found—but by the falling down of the epiglottis on the glottis, which caused asphyxia. Another point was the sudden occurrence of rigor mortis, and the marked extent to which it prevailed, as was proved by the extreme tenacity with which the knife was found grasped in the hand.

The PRESIDENT observed that it was generally found that the more sudden was the occurrence of death, the more sudden and violent was the rigor mortis. In cases of death from slow, lingering diseases, like consumption, it came on slowly—after death from lightning it was very rapid. If there was so much bleeding, he could not understand how the thyroid artery could have escaped; and the influence of hæmorrhage on the rigor mortis was also an important point to determine.

MR. FOY mentioned a case of a man who cut his throat, with a razor, from ear to ear, dividing the larynx, completely and also the superior thyroid artery. He (Mr. Foy) did not see him until an hour after the accident, and yet he was then able to sit up and make violent but ineffectual efforts to drink. In the great majority of suicidal wounds inflicted on the throat, the carotid artery escaped, probably because the first gush of blood weakened the suicide, so that he was then unable to carry the wound deeper.

The Section then adjourned.

SURGICAL SECTION.

President—E. H. Bennett, M.D., President and Fellow of the Royal College of Surgeons, Ireland.
Sectional Secretary—William Stokes, F.R.C.S.I.

Friday, April 24, 1885.

The President in the Chair.

Surgery of the Knee-joint.

Mr. J. K. Barton said: Some points of interest in the surgery of the knee-joint are illustrated by the following six cases:—

1st. Excision for advancing disease.
2nd. Excision for deformity.
3rd. Amputation through the joint.
4th. Removal of an enlarged bursa patellæ.
5th. Removal of a loose cartilage from the joint.
6th. Withdrawal of part of a sewing-needle from the joint.

The patients upon whom the first three operations were performed were all present, and exhibited. The first was a sailor boy, aged fourteen; the second a girl of eight; the third a girl of about twelve. The first case of excision had suffered from periostitis of the femur, but the result (now more than a year since the operation) was satisfactory, the boy walking nimbly and firmly without a stick or support of any kind. The second case was not so far advanced, but there was very firm union, allowing the child to walk well, but still with the help of crutches. The third case was one of amputation through the knee-joint, in a case in which the limb from the knee down was rendered useless by paralysis. The cartilages had been left; the stump was an excellent one. The fourth case was one of enormous enlargement of the bursa patellæ, of which a cast was exhibited. The operation which was undertaken for its removal consisted of the cutting of a very narrow eliptical piece of skin from the front of the tumour, and a similar piece from the front wall of the bursa, after which the contents, which were of the consistence and appearance of boiled sago, were all removed, then the sides were laid down, a drainage tube was inserted at each end, and the edges were united with carbolic gut suture; the dressing was by sero-sublimate (one per cent.) gauze; there was no suppuration; two dressings, sufficient to completely heal the wound. In the fifth case a loose cartilage had been found under the tendon of the extensor, easily pushed out and back again. It was removed by a free incision under spray, and the wound was dressed with the sero-sublimate gauze. The highest temperature marked was 101° on the second night after the operation, after which it speedily became

normal, and the patient returned to the country quite well. The last of the series was that of a housemaid, who in kneeling on the stairs had got a needle into the knee, which, in endeavouring to extract, she broke. The pointed half was left deeply fixed below the patella and in the fibres of the ligament. A free incision was necessary to find it; it was found directed straight in towards the joint, and safely drawn out.

The relation of the cases was accompanied by comments upon the most interesting features of each.

The PRESIDENT disclaimed credit for the splint exhibited, as being on the basis of that of Watson, of Edinburgh. Although the mode of fixing it might vary, the moulding was due to Patrick Heron Watson, as well as the credit for so great a success in excisions at the knee-joint. While the author had dwelt on the necessity of the long anterior flap, and such was generally adopted, yet that flap was unsuitable in cases where disease existed on the front of the limb. About two or three years ago Hardy, of Manchester, published a paper recommending, instead of the long anterior, the oblique circular amputation. An opportunity occurring, in the case of a woman, aged fifty, he followed the procedure suggested, with one advantage, that he was not limited in front for coverings by the disease, which was lupus. A plain-cut surface, instead of being at right angles, was sloped at 45°. The procedure was a little more difficult than the usual method to carry out, but the covering was perfect. In that case he left the patella and the cartilages of the tibia in the joint without any serious consequences from death of cartilages said to result from that course.

MR. STOKES emphasised as very important the method of dealing with cases of excision of the knee-joint after the operation. Speaking from an experience of twenty cases, he had tried different plans of treatment:—(1) Placing the limb in a large box; (2) fixing the limb by means of gypsum bandages or other immovable apparatus; (3) the plan of Patrick Heron Watson, in which the principle was not a posterior, but an anterior splint.

The PRESIDENT.—He has both.

MR. STOKES, continuing, said he had also tried a modification of Watson's plan, devised by his colleague, Mr. Thomson. Instead of strong brass or iron wire, such as in the apparatus on view, a hoop-iron splint was applied both anteriorly and posteriorly, being fixed in position by means of gypsum. But after due trial he had abandoned the gypsum, adopting, however, the plan of the hoop-iron anterior and posterior splints, affixed by broad belts, and these fixed again on an inclined plane to give ample space anteriorly and posteriorly for the dressing of the wound. Quite as important as careful antiseptic dressing was the absolute fixation of the limb during the healing of the wound. But in the apparatus Dr. Barton had brought forward he did not see adequate provision for insuring that

essential in the after-treatment of excision of the knee-joint. At the next meeting he hoped to exhibit an apparatus, devised by himself and the late resident surgeon of the Richmond Hospital, and which, he thought, met the requirements desired better than any other he had seen, the principle of absolute fixation being fully carried out, as well as that of keeping the limb in an inclined plane—*i.e.*, the lower portion of the limb elevated with the view of preventing the tilting forward of the femur, and insuring in that position that the weight of the lower limb pressing against the femur helped to keep the parts from becoming displaced. In addition, he adopted the precaution of suturing the bones in the last two cases of excision of the knee. The result of one of these cases he exhibited at the last meeting but one of the Surgical Section. But in Dr. Barton's apparatus there was another objectionable feature—namely, that it fitted accurately along the posterior portion of the limb, not giving room for changing the dressing within the splint, and therefore necessitating dressing external to it. No matter how carefully the dressing was carried out, accumulations would form between the splint and the integumental structures, which could not be cleaned where the splint was so closely applied, and therefore antiseptic dressing could not be carried out.

Dr. Ball considered Dr. Barton's limitation as to the utility of amputating through the knee-joint practically excluded primary amputation. He had himself two cases of that operation. Both were railway accidents, in which the limb was crushed, and the head of the tibia was splintered into the knee-joint. The usual anterior flap by Carden's method was adopted. The covering of the end of the bone was formed by the skin, which was naturally over the tubercle of the tibia, and was a portion of skin on which persons were accustomed to kneel. Those who claimed superiority for the supra-condyloid operation considered that by bringing the patella down over the cut surface of the femur this was secured. But that was not the case—it was the skin over the tubercle of the tibia that was brought down. As the result, the patients were able to bear the entire weight over the stump quite as well as after Symes' amputation. Both his patients were able to walk without a bucket leg. One of them was advanced in pregnancy, and she was well in a fortnight, while the child was the healthiest she ever had. With regard to the splint, he moulded a piece of wire in the ordinary way as a model, and then got a piece of flat steel, one-eighth of an inch thick, made into exactly the same shape, and rigid, permitting of no flexion whatever, whereas in the wire there was always an amount of spring.

Dr. Hamilton was puzzled, from what he had heard, to determine whether there was an absolute necessity for performing the operation so high up, as the leg was in a comparatively healthy state. He would himself have hesitated before amputating through the knee-joint, and

would probably have been satisfied with amputation below the knee, allowing the patient to rest upon the knee as the natural point of support. Of course Dr. Barton would give reasons for preferring the upper operation; but it was a rule in surgery to cut away as little as possible of the living limb. He had himself had an opportunity of trying almost every splint, and he was perfectly satisfied with the results obtained from Watson's splint, with a little addition. He used a back splint of exceedingly firm material, and he applied to it a very strong iron bracket, which enabled him to leave the limb perfectly undisturbed, and at the same time to renew the dressing as often as he wished. Thus the limb was kept with that perfect rigidity which, as Mr. Stokes remarked, was so important in the treatment of those cases. The splint was made of steel, and sufficiently wide to allow the dressings to be removed without disturbing fixation. He agreed with Dr. Ball that the thin wire splint did not give the desired security.

Mr. Thomson believed that almost as many splints and modifications of them had been devised for the after-treatment of excision of the knee-joint as in fracture of the patella, and that everybody who had had some experience of a particular splint would probably modify it to suit his own wishes. He had himself used two or three, beginning with Watson's—the one in which the posterior splint was made of scored wood, and there was an anterior metal rod extending from the thigh to the foot. The posterior splint was first padded with a considerable amount of cotton wool to allow the limb to lie quietly and easily in it. Then the plaster-of-Paris was applied. He found after some weeks, when the limb had settled down into the splint, a great deal of looseness occurred, so that though in the early days a considerable amount of fixation had been secured, yet this was not so in two or three weeks before actual union took place. Next he tried the excellent splint devised by Mr. Hayes, of the Mater Misericordiæ Hospital, but it did not admit of getting the retaining material sufficiently close upon the limb. After that it struck him that by using hoop-iron, which was introduced in the treatment of morbus coxæ by Dr. Thomas, of Liverpool, he would, provided it was of sufficient strength and thickness, obtain a splint that would answer his requirements. The hoop-iron splint had certain advantages to recommend it, being easily procurable in the country, and capable of being shaped to the limb by bending across the edge of a table or across the knee. He used a posterior splint of plain hoop-iron, and an anterior one moulded in the same way. From the difficulty of cutting through the plaster-of-Paris once it was applied, he abandoned it and now used an ordinary flannel bandage. The results from using the splint which he adopted were exceedingly good, but a wire splint a quarter of an inch thick, such as Mr. Barton's, was unequal to supporting a limb.

Dr. BARTON, in reply, concurred with Mr. Stokes that fixation of the parts was of the first importance. He used a paraffin bandage as lighter than plaster, amalgamating the lower part of the limb and the wire splint, and supporting the splint with sand-bags or a light Liston-like splint placed along from the axilla. This was outside the dressings, and was a supplementary dressing. But to his mind the recommendation of the wire consisted in the very point which Mr. Stokes considered faulty—namely, that it was entirely inside the bandage close to, into the skin, and against the popliteal space, and the antiseptic dressings went round it. In seeking fixity every time the antiseptic dressings were changed, so far as there was a movement of the limb, they destroyed with one hand what they were endeavouring to gain with the other. But the wire remained perfectly steady, and the antiseptic dressings were changed without any movement being communicated to the limb. The wire might be too light, but he did not think it was. With regard to Mr. Hamilton's remark, his reply justifying the operation was that there was no power over the limb below the knee-joint. The muscles acting on the tibia and fibula were paralysed, and therefore to leave what was no longer under the voluntary control of the patient would have been a mistake.

Urari in the Treatment of Tetanus.

MR. M'ARDLE read the notes of a case of acute traumatic tetanus, in which two-third grain doses of urari every fifth hour resulted in a cure, the more remarkable effects produced by the above-named doses being relaxation of the contracted muscles in from six to ten minutes after administration, very rapid and tumultuous action of the heart, cyanosis, laboured breathing, and dilatation of the pupils. Once the patient was sufficiently under the influence of urari, the evacuations from the bowels were regular. Mr. M'Ardle suggested the combination of urari and pilocarpin, in the hope that the cardiac and respiratory trouble produced by the former might be prevented by the latter. He also showed that urari, to be of service, must be used in large doses, and that the drug is cumulative.

The Section then adjourned.

TREATMENT OF TENDON GANGLION.

IN ganglion of a tendon Dr. Nancrede finds the best results from subcutaneous evacuation of the gummy contents of the cyst, and then free discission of the sac. The sensitiveness of the skin is first reduced by the rhigolene spray.—*Polyclinic.*

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P., F. R. Met. Soc.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, June 20, 1885.

Towns	Population in 1885	Births Registered	Deaths Registered			Deaths from Seven Zymotic Diseases							Deaths from Phthisis	Death-rate per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		From all causes	From seven Zymotics
Dublin,	353,082	816	713	116	146	1	39	11	1	9	13	6	103	26·3	3·2
Belfast,	219,222	587	610	111	64	–	162	2	2	16	8	9	86	36·3	11·8
Cork,	80,124	171	149	20	45	–	–	2	1	1	3	–	26	24·2	1·1
Limerick,	38,562	77	74	14	14	–	–	1	–	3	2	2	8	25·0	2·7
Derry,	29,162	48	43	5	9	–	–	–	–	–	2	–	9	19·2	0·9
Waterford,	22,457	54	37	5	9	–	2	–	1	–	–	–	5	21·4	1·7
Galway,	15,471	31	22	3	8	–	–	–	–	–	1	–	3	18·5	0·9
Newry,	14,808	17	32	3	8	–	–	–	–	–	–	1	3	28·1	0·9

Remarks.

In the eight selected towns included in the foregoing Table the highest death-rates are 36·3 per 1,000 of the population annually in Belfast, 28·1 in Newry, 26·3 in Dublin, and 25·0 in Limerick; the lowest rates are 18·5 in Galway, 19·2 in Derry, 21·4 in Waterford, and 24·2 in Cork. The rate of mortality from seven chief zymotics ranged from 11·8 per 1,000 per annum in Belfast, 3·2 in Dublin, 2·7 in Limerick, 1·7 in Waterford, and 1·1 in Cork to 0·9 in Derry, Galway, and Newry.

The recorded deaths represent a rate per 1,000 of the population annually of 19·6 in twenty-eight large English towns (including London, in which the rate was 18·1), 27·4 in the sixteen chief towns of Ireland, 24·2 in Glasgow, and 18·7 in Edinburgh. There is a further decrease (from 20·7 to 19·6) in the mortality in the English towns generally; and in London it has also fallen in proportion—from 19·4 to 18·1 per 1,000 per annum. It has also fallen in Glasgow (from 26·6 to 24·2), but, although still very low, it rose slightly in Edinburgh (to 18·7 compared with 18·1). In the Irish towns the rate of mortality has fallen decidedly,

from 30·8 to 27·4. If the deaths (numbering 15) of persons admitted into public institutions from localities outside the Dublin Registration District are deducted, the death-rate of that district becomes 25·8, while that of the portion of the district included within the municipal boundary is 29·1. In London the epidemic of smallpox happily shows a marked decrease: the deaths were 193, compared with 239, 179, 109, 197, and 229 in the five preceding periods of four weeks each. The weekly number of deaths from this disease since the beginning of the year have been 56, 42, 70, 58, 59, 60, 56, 44, 37, 27, 35, 23, 24, 39, 40, 49, 51, 48, 66, 75, 50, 55, 62, 39, and 37 respectively. The deaths from diarrhœal diseases in the same city, which numbered 54, 51 and 52 in the three preceding periods of four weeks each, were 78.

Acute febrile zymotics were returned as the cause of death in 105 instances in the Dublin district, compared with a ten-years' average of 111·8 in the corresponding period and 143 in the previous four weeks. The 105 deaths included 39 from measles, 11 from scarlet fever, 13 from "fever," 9 from whooping-cough, 6 from diarrhœal diseases, and 1 from diphtheria. The epidemic of scarlet fever shows a decline, the deaths being 5 fewer than in the previous four weeks. Of the 13 deaths referred to "fever," 10 were ascribed to enteric fever and only *one* to typhus, while in two instances the exact nature of the fever was either not specified or was ill-defined. The deaths from fever were 7 less than those registered (20) in the previous four weeks. Seven children aged between one and five years succumbed to scarlet fever. There is a satisfactory decrease in the deaths from whooping-cough—from 17 in the previous four weeks to 9. Of the 9 victims of whooping-cough 7 were between one and five years of age, but no infant of less than twelve months old died of this disease.

In the fourth week of the period, a death from smallpox was registered in the Donnybrook district. It was the first death from this disease which had occurred in Dublin since May, 1881. The victim was a lady who had recently come from London. Unfortunately a relative and a nurse in attendance upon her contracted the disease, and the nurse died subsequently. A noticeable feature of the period was the prevalence of a fatal epidemic of cerebro-spinal fever in some of the southern suburbs of Dublin. As many as 18 deaths were referred to this disease, 15 of the victims being under 20 years of age.

Measles caused as many as 162 deaths in Belfast, 39 in Dublin, and 2 in Waterford. In Waterford the epidemic of this disease again shows a considerable decline; in Dublin also it is decreasing quickly, but in Belfast it has yet again become more destructive to life and is very widespread. Since the beginning of the year the weekly numbers of deaths in Dublin have been 3, 3, 3, 5, 3, 5, 10, 11, 8, 10, 11, 16, 12, 13, 19, 15, 15, 17, 12, 14, 17, 17, 12, 14, and 17 respectively. Of the

39 victims to the disease, whose deaths were registered in the four weeks, 37 were under 5 years of age, including 8 infants of less than twelve months. The outbreak increased somewhat in the North City Districts, in which 9 out of the 39 deaths were registered. In the South City Districts, the deaths were 21 against 34, 44, 22, and 3 in the previous four periods of four weeks each, showing a commencing subsidence of the epidemic. In No. 1 South City District 9 deaths were referred to measles, compared with 20 in the previous four weeks.

Scarlet fever was fatal in only 2 instances in Belfast, in 2 cases in Cork, and in 1 case in Limerick. Diarrhœal diseases were credited with only 18 deaths in the eight towns, compared with 27 and 32 in the two previous periods of four weeks. In London the weekly registered deaths from diarrhœal diseases were 20, 11, 23, and 24 respectively.

In the Dublin Registration District 816 births and 713 deaths were registered, compared with 819 births and 868 deaths in the previous four weeks. The births were those of 383 boys and 433 girls. The deaths of infants under one year were 116 against 145 in the previous four weeks; those of persons aged 60 years and upwards were 146, compared with 193 in the previous period.

The deaths referred to pulmonary consumption in the eight towns were 243, compared with 277, 252, 270, 244, and 239 in the five preceding periods of four weeks each. In Dublin diseases of the respiratory organs are stated to have caused 120 deaths, against an average of 142·7 in the corresponding four weeks of the previous ten years, and compared with 177, 207, 246, 225, and 213 in the five preceding periods of four weeks each. The 120 deaths included 73 from bronchitis (average = 89·8) and 24 from pneumonia (average = 27·0). Of the 73 persons who succumbed to bronchitis, 16 were infants under twelve months, whereas 27 had passed their sixtieth year.

On Saturday, June 20, 1885, there were under treatment in the principal Dublin hospitals one case of smallpox, 21 cases of measles, 30 of scarlet fever, 17 of typhus, 10 of enteric fever, and 8 of pneumonia.

The mean temperature of the four weeks was 56·1° in Dublin, 53·1° in Belfast, 54·7° at Roche's Point, Co. Cork, 54·1° at Edinburgh, and 59·0° at Greenwich. The minimal readings of the thermometer in the screen were 40·4° in Dublin, 38° at Belfast, 45° at Cork, 39·0° at Edinburg, and 39·4° at Greenwich. The maximal temperatures were 73·3° in Dublin, 72° at Belfast, 67° at Cork, 69·9° at Edinburgh, and 84·7° at Greenwich. The returns from Glasgow in the first two weeks of the period are wanting.

The weather was very favourable—the mean temperature showing a very decided advance on that of the previous period—of 10·4° at Greenwich, and 9·0° in Dublin.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of June, 1885.

Mean Height of Barometer,	30·066 inches.
Maximal Height of Barometer (on 27th, at 9 a.m.),	30·388 ,,
Minimal Height of Barometer (on 20th, at 9 a.m.),	29·438 ,,
Mean Dry-bulb Temperature,	56·4°.
Mean Wet-bulb Temperature,	52·0°.
Mean Dew-point Temperature,	47·9°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·336 inch.
Mean Humidity,	74·0 per cent.
Highest Temperature in Shade (on 3rd),	73·3°.
Lowest Temperature in Shade (on 10th),	40·9°.
Lowest Temperature on Grass (Radiation) (on 10th),	34·0°.
Mean Amount of Cloud,	51·0 per cent.
Rainfall (on 8 days),	1·506 inches.
Greatest Daily Rainfall (on 7th),	·501 inch.
General Directions of Wind,	N.E., N.W., W.S.W.

Remarks.

A dry, cool, generally fine month. Polar winds predominated, but much warm sunshine modified their searching character. The rainfall was distributed over only eight days and occurred in a few heavy downpours. A striking feature of the month was the luminous appearance of strands of cirrus cloud on the northern horizon late at night on several occasions, and which was clearly due to reflected daylight.

The mean height of the barometer was 30·066 inches, or 0·142 inch above the average value for June—namely, 29·924 inches. The mercury rose to 30·388 inches at 9 a.m. of the 27th, and sank to 29·438 inches at 9 a.m. of the 20th. The observed range of atmospherical pressure was, therefore, 0·950 inch—slightly less than one inch. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 56·4°; that calculated by Kaemtz's formula from the means of the daily maxima and minima was 54·8°, or 1·8° below the average mean temperature for June calculated in the same way, in the twenty years, 1865–84, inclusive (56·6°). The past month was colder than any June within the past twenty years, except 1882, when the mean temperature was 54·7°. In 1869 and in 1879—the celebrated cold year—the mean temperature (54·9°), very closely approximated to that of June 1885. The arithmetical mean of the maximal and minimal readings was 56·2°. On the 3rd the thermometers in the screen rose to 73·3°—wind S.; on the 10th they fell to 40·9°—wind N. to E. The minimum on the grass was 34·0° on the 10th.

The rainfall was 1·506 inches, distributed over only 8 days. The average rainfall for June in the twenty years, 1865–84, inclusive, was 1·962 inches, and the average number of rainy days was 14·7. Both rainfall and rainy days, accordingly, were decidedly below the average.

There was no sleet or hail; nor did electrical disturbances occur near Dublin. An aurora borealis was seen on the night of the 9th. Solar halos were observed on the 6th and 10th, and the atmosphere was foggy on the 1st and 7th.

During the week ending Saturday, the 6th, the weather was extremely fine, warm, and pleasant, except in the West of Ireland, where some days were dull and rainy. On the 3rd the maximal temperature in Dublin was 73·3°, and there was unusually hot sunshine. Next day a wave of great heat passed over the S.E., E. and N.E. of England, the thermometer rising to 80° at Spurn Head, 81° at York and Oxford, 83° in London, 84° at Loughborough, and 85° at Cambridge. A remarkable decrease of temperature followed, so that on Saturday, the 6th, a minimum of 38° was recorded at Parsonstown. During the previous night (5th–6th) luminous cirri, resembling silvery clouds, were seen on the northern horizon. This appearance was seen on several occasions subsequently in the course of the month, and was probably due to the reflection or refraction of light from cirri floating at a great elevation. On the 6th a very distinct solar halo was visible from noon to 2 p.m.

Very gloomy and wet at the beginning of the second week, the weather became beautifully fine on the 9th, and so continued for several days. Early on the morning of the 9th heavy rain fell in Dublin, and a thunderstorm occurred at Kingstown. On Monday, the 8th, incessant rain was experienced in the midland and south-eastern counties of England. Subsequently, northerly winds and cool, bright weather set in. During the 11th and 12th a decided rise of temperature occurred.

Until the 18th conditions were anticyclonic in Ireland, and the weather was chiefly quiet and fine. Extensive depressions then appeared off our N. W. coasts, and under their influence the weather fell into a squally, showery state—strong winds blowing from points between S. W. and N. W. At the same time, very little rain fell, until the night of the 23rd, when a heavy downpour occurred in connection with a shallow depression, which passed across Ireland. This was succeeded by an anticyclone, which came in from the Atlantic, and remained over Ireland until the end of the month; it caused very fine and pleasant weather, cool northerly winds tempering the heat of what was at times an unclouded sun. On the 28th a thunderstorm depression passed across France, and violent storms of thunder, lightning, and rain were felt in that country and in Germany. Even in England the weather became dull, and at times rainy, and in Ireland also cloudiness increased.

PERISCOPE.

ARTIFICIAL FLUID TYMPANIC MEMBRANE: A NEW MODE OF TREATMENT OF CHRONIC OTORRHŒA.

MICHAEL, having noticed an improvement in the hearing of persons with perforated tympanic membrane when fluid was contained in the ear, conceived the idea of introducing into the ear an artificial fluid tympanic membrane instead of the pledget of wadding ordinarily used. The method he proposes is the following:—By means of a dropper he introduces glycerine into the ear until testing of the hearing, made after the introduction of each drop, shows an increased power of audition. If a drop too much is introduced, it is removed by a little wadding. He then introduces a few drops of elastic collodion, which does not unite with the glycerine, but forms a pellicle on the top of it. It is necessary at certain intervals to renew the collodion, as after a time the pellicle formed by it is destroyed. When purulent otorrhœa is to be treated, Michael uses, in the place of pure glycerine, glycerine and alum or tannic acid. Michael specially remarks that there is no danger in purulent otitis of confining the pus behind the collodion. The double advantage of this mode of treatment is protection of the ear from the air and the application of an astringent solution to its mucous membrane.—*Revue de Thérapeutique*, March 1, 1885, and *Medical News*.

FRACTURE OF THE OLECRANON.

AT a meeting of the Academy of Medicine of Genoa, held May 4, 1885, Professor Caselli presented a young man who had come to his clinic with an ununited fracture of the olecranon, and on account of which the power of extension in the arm was altogether lost. Professor Caselli removed, by a small incision, the loose fragments of bone and the callus thrown out at the seat of fracture, and sutured the fragments of the bone with a strong metallic wire. Having thus approximated the fragments, he twisted the two ends of the wire, made an incision in the periosteum, and slightly excavated the lower fragment beneath the elevated periosteum, and into the small cavity thus formed, introduced the twisted ends of the suture, after which he replaced the periosteum. Reunion took place by first intention, and in eighteen days the patient was completely cured. The articulation at the elbow was restored to a normal condition, and all movements of the arm are naturally performed. The wire suture remains encysted and causes no discomfort or unfavourable symptoms.—*Gazzetta degli Ospitali*, May 24, 1885, and *Med. News*, July 4, 1885.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CLXV.—SEPTEMBER 1, 1885.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. VII.—On the Form of Pneumonia prevalent in Dublin. By JAMES LITTLE, M.D., F.K.Q.C.P.; Physician to the Adelaide Hospital, Dublin, - - - - - - - - 177

ART. VIII.—The Changes occurring in the Skin in some Forms of Disease. By HENRY T. BEWLEY, M.B., B.Ch., A.B., Univ. Dubl.; Sch. and Ex-Med. Sch.; First Senior Moderator and Large Gold Medallist in Natural Science; Assistant to the Professor of Physiology, and formerly Assistant Demonstrator of Anatomy, Trinity College, Dublin, - - - - - - - - 185

ART. IX.—Neurasthenia, Acute and Chronic, and its Importance. By J. STRAHAN, M.D.; late Medical Officer, Belfast Dispensary; formerly Resident Surgeon and Resident Physician; Belfast Union Hospitals, - - - - - - - - - 195

ART. X.—A Case of Tetanus Infantum Successfully Treated. By HENRY DAVY, M.B., M.Ch., Univ. Dubl.; Fellow of the Academy of Medicine, Ireland; Medical Officer of Crumlin and Terenure Dispensaries, Co. Dublin, - - - - - - - 220

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. Recent Works on Hydatid Disease:—1. Hydatid Disease, with Special Reference to its Prevalence in Australia. By J. D. THOMAS, M.D. (Lond), F.R.C.S. (Eng.). 2. Hydatid Disease of the Lungs. By J. D. THOMAS, M.D. (Lond.), F.R.C.S. (Eng.), Physician to the Adelaide Hospital, - - - - - - - 225

2. Materia Medica and Therapeutics: an Introduction to the Rational Treatment of Disease. By J. MITCHELL BRUCE, M.D., - - 227

3. Aneurysms of the Aorta, with Especial Reference to their Position, Direction and Effects: being an Exercise for an Act for the Degree of M.B. in the University of Cambridge. By OSWALD BROWNE, M.A., M.B., of Trinity College, lately House Physician at St. Bartholomew's Hospital, - - - - - - - 228

PAGE

4. Handbook of Geographical and Historical Pathology. By Dr. August Hirsch. Translated from the Second German Edition by Charles Creighton, M.D. Vols. I. and II., - - 229
5. Recent Works on Chromatology:—1. Observations on the Chromatology of Actiniæ. By C. A. MacMunn, M.A., M.D. 2. Observations on some of the Colouring Matters of the Bile and Urine, with Special Reference to their Origin; and on an Easy Method of procuring Hæmatin from Blood. By C. A. MacMunn, M.A., M.D., 230
6. A Text-book of Human Physiology, including Histology and Microscopical Anatomy; with Special Reference to the Requirements of Practical Medicine. By Dr. L. Landois. Translated from the Fourth German Edition, with additions, by William Stirling, M.D., Sc.D. Vol. II., - - - - - - 233
7. Suicide: a Social Science Treatise. By W. Wynn Westcott, M.B., 234
8. The Student's Guide to Medical Jurisprudence. By John Abercrombie, M.D., - - - - - - - 234
9. Pathological Mycology: an Inquiry into the Ætiology of Infective Diseases. By G. Sims Woodhead, M.D., F.R.C.P. Ed., and Arthur W. Hare, M.B., C.M. Section I.—Methods, - - 235
10. The Essentials of Histology, Descriptive and Practical, for the Use of Students. By E. A. Schäfer, F.R.S., - - - 236
11. Eczema and its Management. By Dr. L. Duncan Bulkley. Second Edition, - - - - - - - 237

Part III.—HALF-YEARLY REPORTS.

Report on Nervous and Mental Disease. By Ringrose Atkins, M.A., M.D.; Resident Medical Superintendent, District Lunatic Asylum, Waterford—(*concluded*):—

3. Neuro-Pathology and Pathological Anatomy, - - - 238
4. Neuro-Therapeutics, - - - - - - 249

Part IV.—MEDICAL MISCELLANY.

Academy of Medicine in Ireland:—

SUB-SECTION OF ANATOMY AND PHYSIOLOGY.

Frozen Specimens Illustrative of the Parts concerned in Colotomy. By Dr. D. J. Cunningham, - - - - - 256
Comparative Anatomy of the Chimpanzee. By Dr. D. J. Cunningham, - - - - - - - 256
Five Cases of Muscular and Vascular Anomalies. By Dr. F. T. Heuston, - - - - - - - 256
Anomalous Coronary Artery of the Heart By Dr. Brooks, - 257
Apparatus for Illustrating Pulse-waves. By Dr. Purser, - 258
Hermaphroditism in the Goat. By Dr. D. J. Cunningham, - 258
Interesting Anomalies relating to (1) the Thoracic Duct and (2) the Nerve Supply of the Serratus Magnus and Levator Anguli Scapulæ. By Dr. D. J. Cunningham, - - - 259

PAGE

MEDICAL SECTION.

Notes of Visits to Contrexéville and Royat-les-Bains. By Dr. Cruise, - - - - - - - - 260
Primary Sarcoma of the Right Kidney. By Dr. Walter Smith, 262

OBSTETRICAL SECTION.

Decidual Cast of the Uterus. By Dr. F. W. Kidd, - - 264
New Demonstration Speculum. By Dr. H. Macnaughton Jones, 264
Artificial Vesico-Vaginal Fistula for the Cure of Chronic Cystitis. By Dr. Macan, - - - - - - - 265
Some Points in the Diagnosis of Pelvic Hæmatocele. By Dr. Smyly, - - - - - - - - - 265

Sanitary and Meteorological Notes. Compiled by J. W. Moore, M.D., F.K.Q.C.P., F. R. Met. Soc.:—
Vital Statistics of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, July 18, 1885, - - - 266
Meteorology—Abstract of Observations made at Dublin for Month of July, 1885, - - - - - - - - 269

Periscope:—
Exploratory Incisions in the Diagnosis of Abdominal Tumours, - 224
The Movements of the Stomach, - - - - - 255
Bromide of Arsenic in Diabetes, - - - - - 255
Ointment for the Treatment of Itch, - - - - 265
The Function of the Thyroid Gland, - - - - 271
Poisonous Qualities of Sulphurous Acid, - - - - 272
The Use of Iodine in Diphtheria, - - - - - 272

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THE DUBLIN JOURNAL

OF

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SEPTEMBER 1, 1885.

PART I.

ORIGINAL COMMUNICATIONS.

ART. VII.—*On the Form of Pneumonia prevalent in Dublin.*[a] By JAMES LITTLE, M.D., F.K.Q.C.P.; Physician to the Adelaide Hospital, Dublin.

DURING last winter and spring in Dublin, pneumonia, or pleuro-pneumonia, has been very frequent and exceptionally fatal. I have arrived at this conclusion not only from my own experience, but from what I have been told by professional friends. Indeed, the announcement one often sees of "death from inflammation of the lungs" shows that pneumonia is extensively prevalent and exceptionally fatal. Having had a very rapidly fatal case just before our last meeting, I asked Dr. Montgomery to put my name down for this communication, in the hope that, from the many members of the Academy who have had extensive opportunities of seeing the disease, we would get valuable information as to the ætiology, clinical history, and, more particularly, the treatment of the disease. I propose to give a brief account of the cases which have fallen under my own notice during this winter and spring. In my hospital beds there have only been two slight cases of pneumonia, and all the cases to which I shall refer occurred in private practice.

CASE I.—On November 9, 1884, I saw, with Dr. Samuel Mason, a lady, aged about thirty. The disease affected both lobes of the left lung. The physical signs were dulness on percussion, and tubular breathing. There was also extensive general catarrh. Dr. Mason had treated her with quinine, and she recovered.

[a] Read in the Medical Section of the Academy of Medicine in Ireland, May 1, 1885.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. VII.—*On the Form of Pneumonia prevalent in Dublin.*[a] By JAMES LITTLE, M.D., F.K.Q.C.P.; Physician to the Adelaide Hospital, Dublin.

DURING last winter and spring in Dublin, pneumonia, or pleuro-pneumonia, has been very frequent and exceptionally fatal. I have arrived at this conclusion not only from my own experience, but from what I have been told by professional friends. Indeed, the announcement one often sees of "death from inflammation of the lungs" shows that pneumonia is extensively prevalent and exceptionally fatal. Having had a very rapidly fatal case just before our last meeting, I asked Dr. Montgomery to put my name down for this communication, in the hope that, from the many members of the Academy who have had extensive opportunities of seeing the disease, we would get valuable information as to the ætiology, clinical history, and, more particularly, the treatment of the disease. I propose to give a brief account of the cases which have fallen under my own notice during this winter and spring. In my hospital beds there have only been two slight cases of pneumonia, and all the cases to which I shall refer occurred in private practice.

CASE I.—On November 9, 1884, I saw, with Dr. Samuel Mason, a lady, aged about thirty. The disease affected both lobes of the left lung. The physical signs were dulness on percussion, and tubular breathing. There was also extensive general catarrh. Dr. Mason had treated her with quinine, and she recovered.

[a] Read in the Medical Section of the Academy of Medicine in Ireland, May 1, 1885.

Case II.—On Nov. 29 I was asked to see a very delicate boy, aged eleven years. Three weeks before coming under my care he arrived from the country with his father, occupying apartments in Great Brunswick-street. After a few days of ordinary catarrh, the boy was attacked with severe pain of the left side. I found dulness on percussion posteriorly; tubular respiration; typical pneumonic sputum; and a temperature of 104°. There was a very extensive crop of herpes of a virulent kind. The crop on the face was on the opposite side to that on which the pneumonia existed. There was a crop of herpes on the shoulder, and violent conjunctivitis. He was treated with a hypodermic injection of morphia, and moderate doses of quinine in effervescence. The case terminated favourably about the tenth day.

Case III.—On Dec. 23rd I saw, with Dr. John W. Moore (to whom I am indebted for the notes of the case) and Dr. Harley, a gentleman, aged about thirty-five. On Dec. 20th he had become chilled while watching a foot-ball match. On Dec. 21st he had a sudden rigor while at dinner. On the 22nd Dr. Harley found the physical signs of pneumonia of the right upper lobe. During the following nine days the patient had great cerebral and respiratory oppression, with the indication of over-filling of the right side of the heart and general bronchial catarrh. On the evening of Dec. 26th the pulse was 140, the respiration 60, and the temperature 104°. On 1st January he was attacked apparently with acute peritonitis on the right side of the abdomen, with great constipation. He was relieved by leeching. One of the striking features of the case was that most of the symptoms seemed to arise from congestion of internal organs independent of the lung. He had stupor from apparent congestion of the brain; and the only treatment conspicuously useful in averting the tendency to death was free leeching. He was a very full man, who lived freely and had led an indolent life. He recovered from the pneumonia, but with damaged kidneys.

Case IV.—On Thursday, 1st January, 1885, I saw a lady with Dr. Browne. On the previous Sunday she got a chill, and on Tuesday she was found by a friend sitting over the fire, apparently very ill. She was got to bed, and being some months pregnant, she next day had a miscarriage. On Thursday there was evidence of the lower lobe of the right lung being affected, and she was in a state of great prostration. She begged to be let alone, and said she was dying and in great pain. Beyond a hypodermic injection of morphia to relieve the pain, and the use of some stimulants, nothing could be done, and she died that night.

Case V.—On January 9th I saw a gentleman, aged fifty-five; he was a healthy, temperate man, but had lived for several years in the tropics, and was supposed to have injured his heart by excessive smoking. He

had suffered for some days from ordinary catarrh, and on the 7th, having made a journey fifty miles from Dublin and back, he dined at his Club, but felt so ill he went to bed. Next day he was seen by Dr. Franks. On the following morning I saw him. He had signs of general bronchial catarrh over the whole right lung; dulness on percussion; tubular breathing, and intense pain over the lower part of the left chest. He had abundance of typical pneumonic sputum. There was more pure blood than one ordinarily sees. The striking symptom was the irritability of his stomach—constant vomiting. He was entirely sleepless. On the fourth or fifth day of the illness he was jaundiced, and there was evidence of involvement of the lower lobe of the right lung. He died on the seventh or eighth day, not having had any sleep during the whole of the illness, and being perfectly conscious. The treatment was free dry cupping of the chest, effervescing draughts and digitalis in pill, an effort to obtain sleep being made with the bromides. Dr. Franks and I discussed the use of quinine. We determined not to give it to him—first, because we thought it would not suit in presence of the want of sleep; and secondly, because the gentleman told us that when in China he had been given quinine on account of malarial fever, and it had not agreed with him.

Case VI.—On January 14th I saw, with Dr. More Madden, a precisely similar case, that of a gentleman, thirty-five years of age. He had catarrh, then pneumonia of the lower lobe of the left lung. The temperature, which had been higher, had, when I saw him, fallen to 102°. There was intense typical tubular breathing over the affected lung, dulness on percussion, and pneumonic sputum. The treatment which Dr. More Madden had adopted consisted of free blistering of the chest, with the use of blue pill, squill and quinine in tolerably large doses. He had begun to improve when I saw him. There was no alteration in the treatment, and he ultimately recovered.

Case VII.—On Feb. 7th I saw a case, with Dr. Corley, which differed from the others—that of a delicate lady, thirty years of age, who had on previous occasions been under my own care, for irritative dyspepsia. She had been ailing for some days, but her friends did not attach much importance to her illness as she was often indisposed. She had purged herself violently. When Dr. Corley saw her he found the physical signs of pneumonia of the lower lobe of the left lung. There was an extensive pericardial friction audible on the day of our first consultation. Even then, though she was ill only four or five days, there was evidence of nervous disturbance. Though so seriously ill, and naturally of a sober temperament, she spoke of her condition almost jocularly. Then she became difficult to manage, would not take food, and became sleepless. She died in consequence of the disturbance of the nervous

system. There was typical pneumonia of the lower lobe of the left lung, with pericarditis. In that case the treatment was directed mainly to the support of the patient and the relief of pain by hypodermic injections and the application of leeches.

Case VIII.—On Feb. 4th I saw, with Dr. Kidd, Dr. Henry Hadden, and Dr. David Hadden (to whose kindness I am indebted for the notes of the case), a lady, aged twenty-five. This lady, who was seven months pregnant, had been suffering during the last week of January from general bronchial catarrh. On the 30th she had a rigor and severe vomiting, and during the next few hours the temperature rose to 104·6°. On the morning of Feb. 1st the temperature was normal, and, with the exception of a few bronchial râles, there were no signs of illness; but in the evening she was suddenly attacked with severe stitch in the right side, and the temperature rose to 104°. On the 2nd there was dulness and tubular breathing over the lower right lobe, the face was dusky, and she was delivered prematurely. The treatment had been dry cupping and quinine in effervescence. On Feb. 4th, when I first saw the lady, she had urgent fits of coughing, which caused intense pain, and during these she became violently excited and alarmingly short of breath. The sputum was scanty and viscid, and the soft palate covered by a thin membranous film. On Feb. 6th she complained of pain in the lower part of the left side of the chest, and a pleural friction was audible in this situation. On the seventh day of the illness resolution appeared to have commenced in the right lung, dulness decreased, tubular breathing gradually disappeared, and a few bubbling râles were audible. The temperature, however, remained constant at about 101°, the pulse varied from 96 to 110, and the respirations at about 28 per minute. The cough was kept fairly under control by the hypodermic injection of $\frac{1}{12}$ gr. of morphia each morning, and $\frac{1}{6}$th gr. at night, but occasionally it produced great distress, especially late in the afternoon, when it was accompanied with intense nervous excitement, during which the patient would fling herself about, force her way out of the bed, and become completely unmanageable. These paroxysms were always ushered in by the severe fits of coughing, and were attributed by herself to "want of breath." They invariably ceased on getting the hypodermic injection. Except that the lochia were scanty, there appeared to be no uterine complication. There was some diarrhœa. On the evening of February the 15th the excitement became more severe than on any previous occasion, after which she became completely exhausted. She talked incoherently; her pulse became so feeble and rapid that it could not be counted, and death appeared imminent. Under the influence of stimulating enemata reaction set in, during which the temperature rose to 106°, and, except when asleep, there was constant low muttering delirium. She died on the evening of

Feb. 17th, the eighteenth day of her illness. It should be noted that this lady's husband lay at the same time, and in the same house, seriously ill with pneumonia of the right lung, from which, however, he recovered.

Case IX.—On Monday, March 2nd, I saw in Harcourt-street a lady, aged about sixty. On the evening of March 1st she was in a very crowded church, and having been seized with palpitation, to which she was subject, she left and waited in the porch until her maid brought a cab. She felt chilled, but all right when she got home. Early on Monday morning I had a note saying that her pain was so intense that she felt she would die if not soon relieved. On my arrival I found the skin very hot, the face flushed, and the pulse full and strong. Immediate relief followed the injection of a sixth of a grain of morphia, and the application of a few broad and long strips of rubber adhesive plaster so as to restrain the movements of the chest, and I prescribed a minim of tincture of aconite every hour. Next morning, although there were not the physical signs of pneumonia, there was distinct pneumonic sputum. On Wednesday she was better, and insisted on giving up her medicine. She was bringing up abundant pneumonic sputum. On Thursday morning she was much worse, and I had the advantage of the advice of Dr. Head, who usually attended this lady, and who then took charge of the case. The pain was intense. There was pneumonic sputum; but beyond slight dulness on percussion and an approach to tubular breathing, there was no physical sign of pneumonia. There was distinct pleural friction sound. Next day there was intense tenderness of the abdomen below the right costal arch, and she became delirious, and died on Friday morning.

Case X.—On March 10th I saw a gentleman, aged about fifty-five, with Dr. Henry Kennedy. He had been exposed while attending a fair in the country, and had been ill some days before he sought advice. Dr. Kennedy found pneumonia of the lower lobe of the left lung. At the period of our consultation the pulse and temperature had fallen, and I ventured to take a favourable view of the case. Dr. Kennedy, however, thought more gravely and, as the result proved, more correctly of the case, as the inflammation subsequently attacked the right lower lobe, and death ensued. The treatment consisted of blisters, abundant nourishment with stimulants, which the patient's previous habits rendered necessary, and the administration of expectorants, with small doses of mercury.

Case XI.—March 14th, Mr. O'Grady and I saw a young lady who had often been under my care, but who was at the time his patient on account of an exaggerated spinal curvature, the inconvenience of which he had, by skilfully applied support, almost entirely relieved. She was then seized with pneumonia of the lower lobe of the right lung. There was dulness on percussion, and the tubular breathing was exceedingly well-marked. The treatment consisted in relieving her pain by poultices

and anodyne applications, and assuaging her cough. She was, however, a very unfavourable patient, and died in a few days.

Case XII.—On Saturday, March 21st, I saw another case in the house in Great Brunswick-street in which had occurred the second case I have narrated. This patient was the proprietor of the house, a man aged thirty-five, and who had been a patient of mine for bronchial attacks. He was a large, full man, who, though temperate for some months, had formerly considerably abused the use of stimulants. On the previous Thursday he had been at a funeral and got chilled in the mortuary chapel. On Friday night he walked home late. He did not feel a chill, but he remained sleepless all night, and early in the morning complained of pain in the right side. Dr. Wallace Beatty saw him early, and made the diagnosis of pneumonia. Besides the signs of pneumonia of the lower lobe of the right lung, there was general bronchial catarrh, typical pneumonic sputum, diarrhœa, sleeplessness, delirium, and towards the end rapid failure of the force of the heart. Iodide of potassium had often given this patient signal relief in catarrhal attacks, and I therefore used it with digitalis. He was also freely dry-cupped, and towards the close had turpentine and brandy. Death occurred on the sixth day. Dr. M'Dowel also saw this patient.

Case XIII.—On April 3rd I saw a young gentleman at Dalkey, with Dr. Newland. The illness came on abruptly, apparently in consequence of a chill while walking home on the evening of March 29th. He was treated with large doses of quinine, which Dr. Newland gave to the extent of forty grains in twenty-four hours, for the first two days, and afterwards in smaller doses. The inflammation affected both lobes of the left lung. When I saw him the temperature, which had been 104°, had fallen to 102·8°, the pulse was 100, and respiration 38. Over the lower lobe of the left lung there was dulness, increased thrill and marked bronchial breathing, with some bubbling râle. The cough caused severe pain at the left costal arch, and the expectoration was scanty and bloody. On the fifth day there was violent delirium, and general pyrexia persisted for three weeks, but the patient ultimately recovered.

Of these thirteen cases, eight died. The causes of death varied; it arose in some from the amount of lung tissue affected, and the consequent impediment to respiration and circulation; in others from the failure of the heart's action; in others from the spreading of the inflammation to the adjoining serous membranes; and in some the chief danger appeared to depend on the congestion of distant organs, as the brain and the kidneys. In nearly every case there was a distinct history of chill, which especially occurred after leaving a

crowded building and going into the open air. It is open to those who advocate the doctrine that pneumonia is a truly infective disease, to say that the air in an overcrowded building would be specially favourable to the spread of an infective disease, and that the chill played only a subordinate part in starting it. In two instances two persons had pneumonia in the same house. In two cases an abortive crisis occurred. The frequency of pleural inflammation is worthy of note. According to my observation, the most fatal symptom in pneumonia is severe pain, and more particularly tenderness on pressure.

I am anxious that the discussion should turn chiefly on the treatment of the disease. Dr. Wilson Fox, in his paper on pneumonia in Dr. Russell Reynolds' "System of Medicine," speaks of Dr. Hughes Bennett having selected pneumonia as a disease on which to experiment, with a view to ascertain whether inflammation subsided most rapidly under depletory or stimulating measures, or when left without active treatment; but Dr. Fox observes there is no disease less fitted for such an experiment, because, while there are some cases of pneumonia certain to get well under any treatment, there are others almost certain to die. Although I agree with this opinion, and also believe, with the late Sir Dominic Corrigan, that in pneumonia, as in every other disease, the physician should remember that he is treating not the disease but the patient, and should take into consideration all the peculiarities of the particular case before him, nevertheless I think we should be able to arrive at some general conclusions as to the effect of medicines and other remedial measures, at least with regard to a particular epidemic, even though our conclusions may not be applicable to other outbreaks of the disease. As far as I have been able to form an opinion, I will mention the remedies which appeared to me to exercise a distinct influence over the disease. Where it begins with a chill and rapid elevation of the temperature, the use of aconite in frequently-repeated small doses (say a minim of the pharmacopœial tincture every hour, for eight or ten hours, and then less frequently) gives relief, and sometimes seems to cause the disease to pursue a favourable course. When there is severe pain, a hypodermic injection of morphia, and poultices applied to the side, usually give relief. The indication for any kind of depletion, for the application of leeches or wet cupping of the chest, is overfulness of the right side of the heart. I have seen some cases in which conspicuous relief was thus given. About a year and a half ago, being accidentally near Glendalough, I was asked by Dr. Burgess to see a young

man with double pneumonia, and apparently dying. He was in great distress from oppression of breathing, his pulse was small, and his face dusky. It appeared to Dr. Burgess and me that the chief cause of his danger lay in the over-distension of the right cavities of the heart, of which the signs were present. Being many miles from any place where leeches or cupping instruments could be obtained, Dr. Burgess applied a tumbler exhausted by the flame of turpentine over the lower sternal region and ensiform cartilage, and freely scarified the resulting elevation with a lancet. The bleeding was freely encouraged, conspicuous relief occurred, and the patient recovered. Dry cupping appears to be useful where, with consolidation of a single lobe of a lung, there is also extensive bronchial catarrh. With regard to the utility of quinine, I speak with hesitation. For some years I have generally used it in pneumonia, and it appeared to me most useful when administered in effervescence, from three to five grains of the sulphate being dissolved by the aid of twenty grains of citric acid in an ounce of water, with syrup of orange, and given after the addition of sixteen grains of bicarbonate of soda or potass, in a similar quantity of fluid. There are physicians of experience, however, who consider that quinine exercises no favourable influence over the disease, but, on the contrary, is rather disposed to check expectoration and produce danger; and the chief object of this communication will be attained if it elicits the opinions of the members present.

I hope I shall be permitted to add that since I made to the Academy the communication of which the foregoing is the reporter's notes, I have seen four severe cases of pneumonia, in all of which quinine appeared to be useful. No one is more sensible than I am of the difficulty in judging of the effect of a remedy in an acute and apparently self-limited disease such as pneumonia; but I think the following may be looked upon as fulfilling the conditions of a reliable experiment:—About six weeks ago the wife of a solicitor in this city, a strong, healthy woman, aged nearly forty, but who had been a good deal run down by the bearing and the caring of a large family, after a few days of ordinary catarrh was seized with severe pain in the right side of the chest. She then sent for Dr. Cahill, who found a rough friction sound at the seat of pain. The next day there was pneumonic sputum and harassing cough. I saw her with Dr. Cahill on the fourth day, when there was dulness on percussion, and tubular breathing over the lower lobe of the

right lung, with typical sputum—the general symptoms and the pulse, temperature, and respiration indicating a rather grave case; and we agreed to continue the treatment on which she had been from the commencement—namely, the administration every fourth hour of three grains of quinine in pill, with the occasional use of a cough mixture. On the seventh day, when we met again, the patient's condition was as follows:—She had passed a restless and almost sleepless night, and had been wandering more or less for the previous twenty-four hours. She could give no assistance in turning herself in bed, owing to prostration. Her skin was moist. The respiration was 50, the pulse 90, and small and weak, and the temperature 102·4°. She had a good deal of cough, and had brought up a considerable quantity of prune juice sputum. We had hesitation in raising her up, but on doing so found the evidences of pneumonia over the entire right back, and some dulness and bronchial breathing over the lower lobe of the left lung. We agreed to continue the beef-tea and brandy, which she had been taking, and to give every eighth hour ten grains of quinine in milk. On the following morning Dr. Cahill found the patient so much better that he directed the dose to be give only twice in the twenty-four hours, and this was continued until we met on the evening of the tenth day, when there was such an improvement that we agreed to discontinue medicine.

In two cases in which quinine had been freely given, violent delirium occurred. Perhaps it was not due to the drug, but I rather think it was, and the circumstance suggests caution in the use of the remedy. In the last of these cases the delirium soon ceased on the substitution for the quinine of bromide of sodium in full doses, after the third dose of which sleep was obtained by the administration of fifteen grains of chloral.

ART. VIII.—*The Changes occurring in the Skin in some forms of Disease.*[a] By HENRY T. BEWLEY, M.B., B.Ch., A.B., Univ. Dubl.; Sch. and ex-Med. Sch.; First Senior Moderator and Large Gold Medallist in Natural Science; Assistant to the Professor of Physiology, and formerly Assistant Demonstrator of Anatomy, Trinity College, Dublin.

WHEN I began to consider in what province of Physiology or Pathology it is possible for one who is but lately qualified, and

[a] Being the Essay, by "In cute curandâ plus æquo operata Juventus," to which the first triennial award of the Reuben Harvey Memorial Prize was made, July 1, 1885.

who has but little time or material for research at his disposal, to do any work which has any pretension to originality, the first thought that struck me was that which presented itself to Solomon long ago—that there is nothing new under the sun. However, on further consideration, I perceived that, although it is now, thanks to the number and skill of the investigators of medical science, well-nigh impossible to find any field which has not been more or less explored already, still some fields have been much more thoroughly worked than others. Considering these latter, it occurred to me that the Microscopic Anatomy of Skin Diseases was a subject which has been comparatively overlooked and passed by, at any rate in this country. This arises, I think, from two causes—in the first place, it is very difficult to obtain, for microscopic examination, specimens of skins affected with various diseases; and, in the second place, many forms of these diseases do not present any very striking microscopic lesions; and their classification, in contrast with the modern classification of tumours, is made to depend more on their clinical and macroscopic features than on their microscopic lesions. Hence it happens that, at any rate among students, the histology of skin diseases is almost unknown, and fifty could accurately describe the microscopic appearances of a case of croupous pneumonia or of a carcinoma of the stomach, for one who could describe the structure of a vesicle in herpes zoster, or the changes in a skin affected with chronic eczema. Therefore, having been recently in a position in which I was able to obtain specimens of various skin diseases, I resolved to do so, and chose as my subject for the present essay "The Changes occurring in the Skin in several forms of Disease." At the same time, I am aware that this subject is in several respects an unfavourable, or, at least, a difficult one to work at. In the first place, the microscopic appearances in many skin diseases vary more or less, as regards details, with the intensity or mildness, the acuteness or chronicity, and the recent appearance or long existence of the disease; and, in the second place, in order to be able to assert that any single lesion is normally present in any given form of disease, it is necessary to examine a considerable number of specimens of this disease.

These conditions, necessary for the full description of any pathological process, I have been unable to comply with, having, for the most part, been able to obtain only one specimen of each disease. Therefore, I cannot attempt to give any complete account

of all the various lesions that have been described in the different varieties and stages of those skin diseases of which I have examined single specimens, as, if I were to attempt to do so, I should be obliged to copy largely from the authors who have written on the subject; but I have set before me a less ambitious object, but one which is, I think, more truly original, or, at least, less full of mere copying out of books—namely, to describe as accurately as possible the lesions present in that particular variety and stage of each disease which I have been able to examine.

The books which I have consulted, and which I have found most useful in connection with this work, are—Neumann's Lehrbuch der Hautkrankheiten, Vienna, 1880; the two volumes of the Handbuch der Hautkrankheiten in v. Ziemssen's Cyclopædia, Leipzig, 1884; and Ziegler's Text-book of Pathological Anatomy, London, 1884.

As I have only been able to examine specimens of some few out of the large number of skin diseases, I have not attempted to arrange them in any scientific order.

ACNE ROSACEA.

Of this disease there are two varieties:—1. Non-hypertrophic; 2. Hypertrophic. My specimens belong to the latter variety, being sections of a man's nose, which, after having won the first prize at an exhibition of large noses in Vienna, was amputated on account of its excessive size.

The first stage of this disease is characterised by dilatation of the cutaneous blood-vessels; in the second all the tissues of the true skin become hypertrophied. In my sections the connective tissue of the cutis is enormously increased in amount. It is extremely vascular, being permeated in all directions by hypertrophied or newly-formed vessels. In it are contained very many cells—both spindle-shaped connective-tissue cells, scattered everywhere through it, and also small round lymphoid cells, which are here and there collected into masses or foci, which tend to break down in the middle. These inflammatory foci are chiefly to be found in the neighbourhood of the sebaceous glands.

The hairs are small, appearing merely as appendages of the sebaceous glands, which are enormously increased in size, being both wider and extending more deeply into the cutis than they do in their normal state. They are in this case, as in one described by Duhring, divided into lobules by a new growth of connective

tissue. Their openings on the surface are dilated. The sweat glands appear diminished in number.

Papillæ are almost absent in my specimens, the basement membrane lying quite evenly. In a case examined by Dr. Piffard, of New York, the opposite condition was found, "the papillæ being enlarged in length and breadth, and containing round and fusiform cells."

The epidermis appears normal, except that the superficial layers, and even in places some of the stratum spinosum, have a tendency to fall off, which may be owing to the long-continued maceration in oil to which they were exposed.

ECZEMA.

There are so many varieties and stages of this disease, each differing more or less from the others, that, in order to describe in anything like an adequate manner the lesions that occur in it, a large number of sections of different forms of this disease would be necessary. Such a collection I have not been able to obtain, and hence have been able only to examine a few of the numerous forms of eczema.

In a case of chronic papular eczema which I have examined the surface of the skin is irregular, rough, and warty; the horny layer of the epidermis is greatly thickened, so as to present almost the appearance of ichthyosis. The stratum spinosum is also increased in thickness. The fibrous tissue of the cutis and subcutaneous connective tissue is seen in the form of coarse bundles, which are matted together into a very firm and dense network, containing but few connective tissue cells, and resembling somewhat the condition of the connective tissue in a case of elephantiasis Arabum. In several places in my sections the connective tissue network is so dense that it is stained yellow, as the stratum corneum is, instead of pink by the lithia carmine.

The papillæ and superficial part of the cutis are richly infiltrated with lymphoid cells, which are especially numerous along the course of the blood-vessels.

The papillæ are here and there enlarged. In this case there is no abnormal pigmentation to be seen.

In another case which I examined the appearances, though similar, are not so characteristic. The horny layer of the epidermis is not nearly so thick as it was in the last case; in it are seen here and there collections of small black pigment grains.

Numbers of lymphoid cells are seen in the superficial part of the cutis and along the course of the blood-vessels, as in the last specimen; but the network of fibrous tissue, of which the cutis is composed, is not nearly so dense in this section.

In both these specimens the hair-follicles and sweat-glands do not appear to be materially altered.

I have examined portions of skin taken from two patients who were suffering from chronic eczema of the scalp. In one of them the epidermis is considerably thickened and the papillæ enlarged, while in the second they are not much altered. There is some inflammatory infiltration of the cutis with lymphoid cells. In one specimen this infiltration is confined almost entirely to the upper layers of the cutis, and the deeper layers are remarkably dense; in the other the connective tissue network is not so dense, and the infiltration extends down into the subcutaneous areolar tissue. The hairs and the sebaceous and sweat glands appear normal.

I was given two pieces of skin from a case said to be one of eczema impetiginosum. There are, however, in them several small ulcers, with steep, sharply-defined edges, as if a piece had been punched out of the skin. Therefore, I am very doubtful if this case should be classed as one of eczema at all. Perhaps it is one of ecthyma; but it is very difficult to diagnosticate skin diseases by their microscopic characters.

In this case the cutis is infiltrated with many leucocytes. In several places this inflammatory infiltration has become so intense that the tissues have broken down, leaving ulcers with sharply-defined edges, which extend down to the subcutaneous fatty layer, and whose base and edges are composed of ordinary granulation tissue. At the edge of the ulcer the interpapillary processes of the rete Malpighii are much enlarged, extending a considerable distance into the cutis, and in one of these a very perfect epithelial pearl is seen.

Coming to the margin of one of the ulcers the epidermis becomes covered on its surface by a mass of dried secretion and desquamated cells; the stratum spinosum becomes thinned, and its deeper layer infiltrated by some leucocytes; the boundary line between epidermis and cutis becomes indistinct, and the epidermis ceases, the surface becoming covered with granulation tissue.

In the case of another of the ulcers the epidermis at the margin ceases much more abruptly, its cells becoming flattened up to a defined boundary line, where it ceases, and granulation tissue begins.

In a large number of the cells in the stratum spinosum the nuclei are seen to be in a state of vacuolation. The horny layer is very thin or almost absent. The veins in the cutis are enlarged.

HERPES ZOSTER.

The process of formation of the vesicles begins by the formation of vacuoles in the cells of the middle layers of the stratum spinosum. The cells in the neighbourhood at the same time undergo rapid proliferation, and some of them are seen to contain many round, deeply-staining nuclei. The vacuoles increase in size and number, and finally a number of them coalesce, thus forming a cavity of irregular shape. A number of small round cells are at the same time seen in the epidermis, which have, I think, migrated thither from the cutis, as towards the middle of the base of the vesicle the line of demarcation between epidermis and cutis is almost obliterated, and many small cells with deeply-staining nuclei may be traced from the cuticular infiltration up into the epidermis.

The vesicle, therefore, comes to lie in the layers of the stratum spinosum. Many of the cells forming its walls are large and multinucleated, being quite unlike any epidermal cells I have seen in other skin diseases, and forming remarkable objects. These do not lie close to one another, but are separated by the exudation. Among them are many lymphoid cells. The cavity of the vesicle is traversed irregularly by bands composed in part of cells and in part of coagulated fibrin. The cells in these bands are some of larger size, belonging to the stratum spinosum, and some smaller, being leucocytes.

Haight, in his figure of a section of a herpes vesicle—which appears to be the classical woodcut of this disease, as it is copied into all the books I have consulted which give any woodcuts—represents these cells as being all spindle-shaped or stellate, describing a band across the vesicle as being formed entirely of spindle-shaped cells. Such cells I have not been able to see in my sections. I find this network to be composed either of thick bands of round, plump cells held together by a little fibrin, or to be mainly fibrinous, containing a few cells.

In the middle—the oldest—parts of the vesicle the epidermal cells undergo a horny transformation, which is most marked in the roof of the vesicle, but is also found in the cells forming its floor. The nuclei are lost, and the outlines of the individual cells become less distinct.

The cutis corresponding to the bases of the vesicles is infiltrated with leucocytes, which infiltration extends down to the fat of the subcutaneous areolar tissue. It is especially abundant in the neighbourhood of the blood-vessels.

LEPROSY.

The lesions in tubercular leprosy consist in the formation in the cutis and subcutaneous tissue of nodes of granulation tissue. In my sections these nodes extend up to the basement membrane and down to the subcutaneous areolar tissue. They are made up of a number of cells embedded in a fibrous stroma, and contain blood-vessels. The cells are not arranged in so dense masses as in lupus and the more acute forms of inflammation, consequently the fibrous stroma makes up a good part of the node, and to this peculiarity may perhaps be due their permanence and comparatively slight tendency to undergo degenerative changes. The cells in these nodules are of two varieties—small lymphoid cells with deeply-staining nuclei and larger epithelioid cells with larger paler nuclei, in which several nucleoli may be seen. In some of the smaller arteries the internal coat is considerably thickened, and the lumen narrowed thereby. Others, however, of the arteries are not so affected.

Although there are no hairs to be seen in my sections, the unstriped muscular fibres of the skin appear hypertrophied.

The epidermis appears normal; the horny layers are very thin in comparison with the thickness of the stratum spinosum; the nuclei in many cells of the latter are vacuolated.

In one of my sections, which I have stained according to Gram's method—stained first in carmine, then in a solution of gentian violet in anilin water, and removed the excess of staining with a solution of iodine and iodide of potassium in water, and finally with alcohol—the bacillus lepræ may be very clearly seen stained blue, while the surrounding tissues are purple in colour. In the leprous nodules some of the cells are stained purple, while others are stained blue, the latter receiving this colour from the large number of bacilli which they contain. The bacilli may be seen lying, some within the protoplasm of the large cells, and others in the intercellular substance. They are said to measure in length about half the diameter of a human red blood corpuscle.

LUPUS.

Lupus consists in the subepidermal formation of foci of granulation tissue, which consist of small lymphoid and larger epithelioid

cells set in a fibrous network, and containing here and there giant cells. In the neighbourhood of the nodules the skin is diffusely infiltrated with small round cells. The nodules are seen to be permeated by blood-vessels, and there are seen around them some of those "strings of cells following the course of the lymphatics" described by Ziegler.

The papillæ are large, are thickly infiltrated with lymphoid cells, and contain enlarged vascular loops.

The stratum spinosum corresponding to the nodules is much thickened, as it is over the nodules in glanders; growths of the epidermal cells, in the form of branching and interlacing columns, extend for some distance down into the cutis, "reminding one of the cellular growths of epithelioma" (Ziegler). This layer is also permeated by a number of small round cells, which have migrated thither from the cutis. Here and there the epidermis shows a tendency to form pearls. The horny layer is also thickened. Many of the cells in the stratum spinosum contain a vacuole inside their nucleus.

In another specimen of lupus the disease is not in such an advanced condition. Many collections of lymphoid cells are seen in the cutis and subcutaneous tissue, where they chiefly group themselves about the blood-vessels. In some of these foci the cells are much more closely grouped together than in others. Kaposi speaks of these foci as being, at any rate when recent, sharply defined from the surrounding tissue; in my sections they fade off gradually.

GLANDERS.

The cutaneous lesions in glanders consist in the formation in the skin and subcutaneous tissue of inflammatory nodules or foci, which at first view are not unlike those found in lupus. These nodules are pretty sharply defined, and here and there, where the inflammatory process has not gone too far, are seen to be crossed by the remains of hair-follicles, sweat-glands, and blood-vessels.

They are described as consisting of "a delicate vascular stroma, filled throughout by numerous round cells, crowded together in clusters, and presenting the appearance of ordinary pus corpuscles or granulation cells."—Ziegler.

These glanders-nodules are, however, distinguished from other localised inflammatory foci, such as those of lupus, by the great violence of the process, and the extreme rapidity with which the

cells of which they are composed break up and disintegrate, so that even the smallest and most recent nodule is seen to be made up in the middle, not of ordinary granulation tissue, but of a mass of detritus, consisting of broken up and disintegrated cells, nuclei, and granules of all sizes.

The lymphatics in the neighbourhood of the nodules are much enlarged.

In my sections the epidermis is as yet unaffected; the stratum spinosum is, however, considerably increased in thickness in the neighbourhood of the nodules.

CUTANEOUS HORN.

Of these rare structures there appear, from the descriptions given of their histology, to be several varieties.

The horn of which I have cut sections rests on enlarged papillæ. Up to the edge of the horn they are of normal size, but then become enormously long, branching and subdividing many times. About these enlarged papillæ the stratum spinosum is greatly thickened, and upon it a large mass of horny cells is placed. On the top of the horn this layer is arranged in columns, so that the horn ends in a number of bristle-like processes, each of which corresponds to a branch of a papilla. The papillæ are seen extending a long way up into the horn in the form of narrow tubes surrounded by epidermis.

The cutis at the base of the horn is infiltrated with many small round cells, which are rather suspicious of commencing epithelioma—a kind of growth which these horns are very liable to take on.

G. Simon (Oesterr. Zeitschr. f. prakt. Heilkunde, 1854) describes another variety of horn, in which he distinguishes cortical and medullary substance, saying "that the tissue is penetrated by many canals, which are held to be blood-vessels cut through, and which are partly coloured red from their contents. The central part of the horn is more compact and less vascular than the outer," which is the opposite condition to that which I find in my sections.

Lebert (Ueber Keratose oder die durch Bildung von Hornsubstanz erzeugten Krankheiten, Breslau, 1864, p. 76) says horns spring from the deeper layers of the epidermis. He describes their structure, when examined in longitudinal sections, as consisting of "a mass of small columns, rods, or palisades lying close one to another, and so intimately united by a connecting substance as to appear blended into a homogeneous mass. The individual columns

have a striped, shreddy appearance, and are made up entirely of epidermal cells arranged one upon another in an imbricated manner."

Neumann (Lehrbuch) says they are hyperplasias, sometimes of the epidermis, sometimes of sebaceous glands, sometimes even of sweat glands.

FIBROMA MOLLUSCUM.

These tumours vary in hardness. Ziegler says "the less firm varieties are rich in small cells, and the fibrillation of the intercellular tissue is indistinct; the firmer varieties have fewer cells, and are markedly fibrous; but in no case is the tissue so coarsely fibrous as that of the normal cutis."

The two tumours seen in my sections consist of a mass of finely fibrous tissue, containing many cells, which appear spindle-shaped, with elongated nuclei. The tumours are separated from the surrounding tissue by a very distinct line; this fibrous tissue round them is much coarser, and contains much fewer cells. The fibroma is remarkably rich in blood-vessels, which have thin walls.

The papillæ of that portion of the skin which lies over it are atrophied.

The structure of the softer variety is described by Neumann (Lehrbuch) as consisting of large areolæ, permeated by a fine network of fibrous tissue, from which an albuminous fluid containing numerous cells may be pressed out. The figure which he gives of such a tumour presents an appearance very similar to that of an alveolar sarcoma.

GASSERIAN GANGLION IN A CASE OF PEMPHIGUS OF THE FACE.

The opinion has for some time been held that certain skin diseases are caused by lesions of the nervous system. To this class, besides herpes zoster—whose ætiology seems now better known than that of most forms of skin disease of this class—some cases of pemphigus are thought to belong, and in a few this opinion has been confirmed by microscopic examination. The lesions occur in various parts of the nervous system. In a case of herpes iris (pemphigus?), Jarisch (Sitzungsb. a. k. k. Akad. d. Wissensch., III. Abth. Bd. 81, Mai, 1880) found lesions in the gray matter of the spinal cord in several places in the length of the cord, especially in the anterior cornua. The changes consisted in inflammatory appearances of the ganglion cells, swelling of their processes, and of the fibrillar connective

tissue, where a network with coarse meshes, and bodies looking like drops of myelin were seen, giving the idea of proliferation.

Dejérine and Leloir (*Gaz. d. Hôp.*, 1876, p. 835), again, found lesions in the peripheral nerves in a case of pemphigus. Near fresh vesicles they saw nerves in a state of degeneration—the axis-cylinder had disappeared, the myelin had run together into lumps, the neurilemma was in places varicose, owing to accumulations of myelin. In the neighbourhood of old vesicles the axis-cylinders and myelin of the nerves had disappeared, and only the neurilemma tubes were left; in them the nuclei were increased in number.

I have made sections of a Gasserian ganglion in a case of unilateral pemphigus of the face; in it are seen a number of small hæmorrhages, apparently not very recent; the connective tissue is in parts thickly infiltrated with small round cells, which are especially numerous about the ganglion cells, and about some of the nerve-trunks, which come off from the ganglion.

If the lesions in the spinal cord, and in the peripheral nerves in Jarisch's and Dejérine's cases respectively, are to be looked on as the cause of the eruptions of pemphigus, I think there is just as good ground for holding these extravasations and inflammatory infiltrations to be the cause of the eruption in this case, where the disease was confined to the skin, which was supplied by the fifth nerve on the side on which these changes are seen in the ganglion.

[*To be concluded.*]

ART. IX.—*Neurasthenia, Acute and Chronic, and its Importance.* By J. STRAHAN, M.D.; late Medical Officer, Belfast Dispensary; formerly Resident Surgeon and Resident Physician, Belfast Union Hospitals.

THIS disease, in its almost innumerable forms, is sufficiently common in this country, and sufficiently important to the profession, even as influencing diagnosis and prognosis in many obscure cases, in general practice, to justify much more attention than it has yet received in medical literature. In almost all of our best text-books the subject is never even mentioned, under any head whatever. Indeed, the only common text-book which mentions it is Flint. He indicates, at least, the existence and importance of this disease. In Quain's Dictionary there are two articles, one on spinal neurasthenia, another on spinal irritation, by Drs. Bastian and Brown-Séquard respectively; but these diseases are treated as separate affections, and no indication

is given of their being only forms of a more general neurosis. Even works on nervous diseases have the same omission, except the article by Dr. W. H. Erb, of Heidelberg, in Ziemssen's Cyclopædia, and the "Maladies du System Nerveux" (Paris, 1879), by Dr. J. Grasset, Montpellier, and "Diseases of the Nervous System," by Rosenthal, of Vienna. Dr. Althaus, in the 3rd edition of his work on Electricity (1873), has a short chapter on spinal exhaustion; he also has a monograph on "Failure of Brain Power," which disease, in its functional aspect, would correspond with the cerebral form of neurasthenia, or cerebrasthenia, as it has been called. Handfield Jones has touched on some of the symptoms in a chapter in his "Functional Nervous Diseases," called cerebral paresis. But, with the exception of the writings of Dr. Beard, of New York, to which I must acknowledge my indebtedness, there has been no attempt at collecting the varied symptoms, showing their connection and common cause, and exhibiting the affection in an intelligible way, and as a whole. Of course all the individual symptoms and forms have been observed and recorded, as they must have been observed, since Hippocrates; but still this was of little use to anybody. The disease is most common in the United States, and more common among the Irish than the English or Scotch; but still, according to Erb, it is pretty common in Germany, and, on grounds of race, should be tolerably common in England. This influence of race on the nervous system cannot be better shown than by the different actions of drugs, such as alcohol and chloroform, upon it in different peoples. The difference between an Irishman mad with whisky, or a Frenchman on fire with brandy, and an Englishman, Dutchman, or German sodden with his beer, or even gin, is obvious to everyone. As regards chloroform, the obsevrations of Dr. Lyons, M.P., of Dublin, in the Crimea are peculiarly interesting. Dr. Lyons was Pathologist-in-Chief to the British Forces. He found the Turks and the Russian prisoners most susceptible to the influence of chloroform, and, without exception almost all, in the space of a few minutes, fell *silently* into a state of complete insensibility. The wild, fierce Tartar, contrary to all expectation, proved the most gentle and docile patient of all the mixed nationalities assembled at Sebastopol. Next to the Tartar came the Saxon type of Englishman—phlegmatic, fair-haired, blue-eyed. He did not go under the narcotic influence so quickly or so silently as the Russian, but still silently, quickly, and profoundly. Next came the Sardinian, who takes a position midway between the Russian, Turk, and Saxon

Englishman on the one hand, and the more excitable, vivacious, and nervous Irish and French members of the great Celtic family on the other. Excitement, in language and gesture, and resistance to inhalation, were marked in the case of the North Italian, but never caused such infinite trouble to the administrator, nor such violent excitement as in the French and Irish. Taking the agile Zouave as a type of the French, the inhalation was very often resisted, then a stage of wild excitement, rambling and boisterous talk, often in *patois*, with shouts, curses, or laughter, ensued, and anæsthesia was only induced after a long protracted struggle, and, even then, hardly ever so profoundly as in the races before-mentioned. But the most marked instance of chloroformic intoxication and its wildest demonstrations were seen in the Irishman. After a stout resistance to inhalation came furious struggles, curses, both loud and deep, laughter in one, anger in another, and then a breaking forth of native Irish. The length of time in these men was so great as to become a serious obstacle to the surgeons in getting on with the primary operations. The Scotch Celt showed only in part the excitement so marked in the pure Irishman. Many other examples of the influence of race on the nervous system might be given. Perhaps race will best account for the fact that the best work on spinal irritation—an important phase of neurasthenia—is by two Irishmen, William Griffen, M.D., and David Griffen, of Limerick, which was published in 1844.

Neurasthenia is a condition of prostration of the whole or some portion of the nervous system, owing to deficient nutrition of the parts, in which there is no gross lesion visible to either eye or microscope of any part of the brain or spinal cord. It even occurs without general anæmia, or any very evident disorder of any vital function. It proceeds from excessive functional activity of some part of the nervous system, especially as connected with the undue exercise of the reproductive function, the emotional, or the intellectual faculties. An investigation of the different organs reveals nothing; the kidneys, heart, lungs, &c., are normal. No affection which can be named may be discovered, yet the disease is real. A full consideration of neurasthenia would make a volume, so I will only endeavour to sketch an outline. The subject is of growing importance, as, no doubt, the disease is becoming more common each year; and occurring alone, or, still more, complicating many every-day complaints, is of great importance to the physician. All the more so, as one in every ten cases is said to occur in a medical man,

many of whom despair of being able to continue their work, as they have visions of all sorts of organic nerve lesions before their eyes—from cerebral softening and spinal paraplegia to locomotor ataxy and insanity. The disease is, therefore, of immense importance in its moral and social, as well as in its pathological and purely medical aspects. Every medical man is familiar with these cases, although he may have no name for the disease. Such patients complain of langour, want of buoyancy, mental depression, general weakness, loss of all brightness and energy in pursuit either of business or pleasure. There seems to be a permanent fatigue condition established in the nerve centres, so that nutrition can never overtake demand. The patient usually is wakeful during the night, and is as fatigued in the morning as he should be at night. He may, under mental excitement, be able to exert body or mind as of old, but he is jaded and worn out when the excitement passes. He becomes apprehensive of a break-down, and very often his nervous exhaustion engenders hypochondriasis. An inquiry will usually show that the mind has been for a long time worried or over-worked, or both. Long-continued anxiety, over-exertion combined with worry in some way—in short, anything which diminishes the vigour of the body, will cause wear and tear of the nervous system. Irregular meals, irregular sleep and rest, want of recreation and holidays, competition in the race of life—all contribute to the production of this affection. Bad habits, such as errors of diet, sexual errors or vices, immoderate smoking, and especially anything beyond great moderation in the use of alcohol, prove very efficient auxiliaries in the causation.

I venture to express the opinion that we have excellent examples of general neurasthenia, acute and chronic, in such familiar cases as the so-called spermatorrhœa, chloralism, bromism, alcoholism, meconism (opio-mania), caffeinism, and the nerve-prostration due to many such drugs. Of course I refer to the purely nervous symptoms, and not to material lesions caused by the poison used, or to the local lesions, and the direct symptoms caused by them, in spermatorrhœa. But a drunkard can have nerve-prostration irrespective of a possibly cirrhosed liver, stomach, or kidney, or fatty heart, and even when we know he is organically sound; and a man can be very badly exhausted and find all his faculties and energies slipping from him from sexual excess without the least local disorder. The symptoms naturally divide themselves into those proceeding from cerebral exhaustion and those proceeding from spinal exhaustion, but these two classes are often variously combined, and often the

exhaustion is general. The first important cerebral symptom is insomnia. This is nearly always present, more or less, and during treatment forms a very good criterion of the improvement or otherwise of the patient. Some go to sleep at once, but awake in a few hours, to remain tossing restlessly the remainder of the night; others cannot get off to sleep for hours, but when once asleep remain so till morning; others remain asleep through the night but dream so badly that they awake as tired as when they lay down, but indeed this tiredness in the morning is quite characteristic of neurasthenics. Another almost constant feature of these cases is that the mind is intensely active in a hundred directions during the sleepless hours from an undue mobility of the brain and want of inhibitory power on the part of the patient. It displays a mixture of irritability and deficient power which is characteristic. This condition is seen advanced to a further stage in states bordering on *delirium tremens*, and in that disease itself, but there you have hallucinations and incoherency added, a still further stage of irritation and loss of control. Another not uncommon feature of the sleep of neurasthenics is spasmodic movements just as they drop off to sleep, often recurring again and again, and rendering the patient afraid to go to sleep for fear of having a fit. These spasmodic movements may be of an arm or leg only, or the whole body may start from the bed, or may feel as if falling through space. These movements are often attributed by the medical attendant to *petit mal*, and by the patient to a tendency to apoplexy, epilepsy, or paralysis, and so increase the evil by causing still deeper mental depression. They may be caused by a passing congestion of exhausted nerve centres, but seem to depend on the loss of inhibitory power already alluded to. The next prominent symptom is mental irritability. Everyone has observed in his own person how irritable he is after the loss of a night's sleep, or any other cause of even temporary nerve-exhaustion. This is much more marked and troublesome where neurasthenia has become a chronic condition. Combined with this irritability is inability to concentrate the intellect on tasks which in the healthy state were executed with pleasure or even enthusiasm, in place of the distress and misery attending mental effort during neurasthenia. The mind constantly wanders from the matter in hand and tends to continual reverie. The person remains absorbed in a kind of dream, forgetful of the work that he knows and feels he should be giving his energies to. Connected with this loss of mental control is what has been called "hetero-

phemy"—*i.e.*, saying one thing and meaning another. This symptom is often attributed to a threatening of organic cerebral disease—*e.g.*, brain softening—to the great annoyance and discouragement of the patient.

Morbid Fears.—Morbid fear is well seen in the nerve-prostration caused by alcoholism, either acute or chronic, where a man fancies his affairs are all going to the dogs, and there is a continual dread of impending calamity. This is often one cause of loss of sleep, and is one of the heaviest items in the bill a man has to pay for vicious indulgence, and is one cause of the frequency of suicide as a sequel to a debauch. Fear is, of course, a part of man's nature and a necessity to self-preservation, and the only difference, as to fear, between health and disease is one of degree. Morbid fear implies a debility, an incompetency, an inadequacy of mental force, as compared with the usual state of the individual. From lack of force in the disordered nervous system, brain debility, the man is unable to look others in the face as he would in health. The nerve-impoverishment makes him incapable of undertaking responsibility. Charles Lamb has well described this state in his "Confessions of a Drunkard," where he tells how he was completely incapable of dealing with men in any way, could not transact the simplest business—indeed could hardly appear in public at all—owing to an undefined morbid fear of his fellow-men.

These morbid fears sometimes take a particular direction. The result is a whole crop of new terms for these interesting varieties of morbid fear. Thus we have astraphobia, or fear of lightning; and topophobia, or fear of places—the latter form has itself quite a number of varieties. There is agoraphobia, or fear of large open spaces or places. Dr. Meschede described at Cassel, in Germany, a fear of close, narrow places, and Professor Ball, of Paris, applied the term claustrophobia to it. Anthropophobia, the fear of seeing, encountering or mingling with men, I have alluded to. It has a variety, gynæphobia, fear of women, usually due to sexual exhaustion. The aversion of the eyes and hanging the head which is found in neurasthenia from many causes, but is almost uniformly present in the sexual form, is an involuntary expression of inferiority. The man averting his look feels that his brain and nerve-force, for the moment at least, are inferior to the person's whose gaze he is unable to meet. And I am of opinion that the more sudden and complete has been the reduction of force, the more marked is the turning away. The usually strong man feels a sort of false shame at being seen in such

a plight—just the same feeling as most culprits have, and often exhibit in the same way, on being brought into court and charged with an offence, and especially a disgraceful one. This symptom often puts the physician on the track of the complaint at once, as there is no such self-consciousness attending organic nerve lesions, such as locomotor ataxy, which may resemble neurasthenia, especially now that ataxic symptoms have so swelled out that a moderate volume might be filled with them, just as is the case with neurasthenia. The inability to look one in the face also improves or gets worse with the general condition, so that it becomes a criterion of the progress of the patient. Then we have monophobia, fear of being alone; pantaphobia, fear of everything; and pathophobia, the fear of diseases, usually called hypochondriasis. But I do not mean to express the opinion that in all cases hypochondriasis is merely a symptom of neurasthenia. In true hypochondriasis the patient cannot be reasoned out of his belief in the disease he imagines to be present. It, thus, is of the nature of a simple delusion. But I look on hypochondriasis as a neurasthenic symptom merely when some nerve reflex from the digestive, or reproductive, or other system, or general neurasthenia causes a fear of some disease groundlessly, as in other forms of morbid fear. Also, in order to be considered neurasthenic, pathophobia should be accompanied by some other symptoms of that state—some other evidence of disordered nervous system. Some neurasthenics are rendered miserable by the slightest responsibility; others are afraid of committing a crime, or of doing something which will bring lasting disgrace upon them. Dr. Hammond described a morbid fear he calls "mysophobia," fear of contamination. Rigler, of Germany, describes a form of intense spinal irritation, attended by a condition closely allied to hysteria, with great feeling of inability to attend to duty. This disease he finds common among railway servants who have some altered nerve condition, from the constant jarring and noise, which, by degrees and after a long time, breaks up the balance of the nervous power.

These morbid fears of whatever kind have the following points in common:—They may come on quite suddenly, but when once they appear (except as the consequence of a very temporary reduction of nerve power) they remain for months or years, varying with the patient's general condition. They very frequently indeed indicate sexual exhaustion. Excess of whatever kind nearly invariably produces them in the long run, and is their most common cause. They are nearly always accompanied by other neurasthenic symptoms.

They indicate *functional*, rarely or never *organic*, nervous disease—indeed, their presence, in an otherwise doubtful case, would almost make the diagnosis certain. Sick headache is very often a neurasthenic symptom, and like spinal irritation is often present in healthy females during menstruation—*i.e.*, when the system is exhausted. The influence of caffein on both these symptoms (when they occur accidentally in the healthy especially) is often wonderful. By stimulating the heart's action, raising the pressure in the vessels, and probably by direct action on nerve tissue, it very frequently cures the headache or the spinal pain and sense of exhaustion and misery in a very short time. Two or three grains every half hour for a few times rarely fails in at least alleviating the pain decidedly. There are no bad after-effects, except sometimes insomnia for the succeeding night only.

We can easily understand the good effects of caffein if the observations of M. Guimares are to be depended upon. In a communication to the Paris Académie des Sciences, he says that from many experiments on dogs he finds that, whether the animals are starving or well fed, caffein always causes *increased excretion* and *augmented disassimilation*. It follows, of course, that in the course of a few days assimilation rises, and thus nutrition is improved. He also found that caffein causes a marked increase in the amount of blood-pressure, with acceleration of the cardiac and respiratory movements, with a slight increase in the rectal temperature and the excitability of the nervous centres. Doses too large to be well borne are necessary to produce the opposite phenomena of retardation of the heart and diminution in the bloood-pressure and temperature. Although this view is directly opposite to the usually received notions as to tea and coffee, cocoa, &c., diminishing nutrition by lessening waste and the necessity for food, still it is confirmed by the observations of Dr. Brackenridge, of Edinburgh, who, in speaking of it as a marvellous diuretic in cardiac dropsy, says it seems directly to stimulate the renal epithelium and to increase the solids of the urine. It is not at all dangerous in any reasonable dose. Dr. Dujardin-Beaumetz, in a clinical lecture at the Hôpital Cochin, Paris, speaking of this valuable heart tonic, says—"Veritable resurrections are effected in our service by this marvellous therapeutic agent," and recommends that large doses, even amounting to as much as two grammes (or half a drachm) a day, should be given in order to obtain the full benefit from its use. It is to cases of marked cardiac debility that he refers, and he finds the heart's action steadied and strengthened and the

vascular tension augmented. Dilatation of the pupils, when not owing to brain or eye disease, is usually neurasthenic. I suppose we have all noticed the excessive dilatation which sometimes occurs the day after a fit of drinking. Pain and weight at the vertex of the head (supposed to be distinctive of cerebral anæmia) are usually neurasthenic; also tenderness of the scalp (cerebral irritation). This is to the exhausted brain what spinal irritation is to the exhausted spine. Frequently this tenderness is partial, sometimes only a tender spot over an eyebrow and in the temporal region, or a tender spot at the base of the occiput, as in sick headache. Muscæ volitantes are common even in the slightly neurasthenic. Noises in the ears of various kinds, sometimes synchronous with the movements of the heart, are usually neurasthenic. Dr. B. W. Richardson, in his "Diseases of Modern Life," attributes these noises in the ears which are synchronous with the pulse to arterial relaxation of the carotids as they pass through their canals into the skull. He says they may continue for a length of time and then cease suddenly. There is a form of asthenopia, not depending solely on accommodative or even muscular trouble, to which neurasthenics are liable. It often renders reading, writing, and all fine work very painful, or even impossible, for more than a few minutes at a time. It is a very distressing symptom, and may last for years, showing its neurasthenic origin (as nearly all the symptoms do) by its suddenly ceasing for a time. In my experience it is a very common affection. I am acquainted with several young females affected with this form of asthenopia who have been to very competent oculists, who on examination declared there was no disease, and who tried different glasses without good effect. The eyes are often very painful and tender, and many patients call it neuralgia of the eyes. There is passive venous congestion of the conjunctiva, which is the effect of the nerve irritation, not the cause. There may, of course, be some insufficiency of the internal recti or hypermetropia, but not enough to account for the distress and for its capricious nature. A loss of power in the voice is very common in neurasthenics. The voice becomes faint, soft, and toneless, like that of a person after a severe illness. This voice is more or less diagnostic of the disease. Hopelessness is a very common symptom. In severe organic diseases the patient is usually hopeful, as in phthisis, heart disease, cancer, paralysis, ataxy, &c. This hopefulness sometimes even extends to the end of life. But neurasthenics lose all hope of cure, even when they do not become hypochondriacal and fancy a much worse disease than exists. The same tendency

exists in most neuroses—for instance, an attack of neuralgia or sick headache reduces the most strong-minded to a state of despair and the lowest spirits.

Nervous Dyspepsia.—This is often the first symptom of nervous exhaustion. The cause and connection may not be apparent for years, when it becomes evident through other portions of the nervous system becoming affected, as displayed by the development of some of the more characteristic symptoms. This form of dyspepsia is distinguished from others and from chronic gastritis by the fact that, instead of pain and distress coming on or becoming aggravated after eating, the uneasy feelings are always worst on an empty stomach, and missing of a meal is attended with great general discomfort, pains, and weakness. Eating gives relief to the local and general uneasiness at once. The affection is capricious—coming and going without apparent reason. It is also distinguished from ordinary dyspepsia by the results of treatment. Most relief is given by bromides, sedatives, and tonics, which have little or no specific effect on the stomach or digestion, but which act rather on the nervous system at large. Gastrodynia and all the abdominal neuroses (for a good account of which we are indebted to the excellent lectures of Dr. Clifford Allbutt, in last year's *Brit. Med. Jour.*) are also, in my opinion, mere symptoms and indications of neurasthenia, especially where it is more centred in the spinal cord, whether attended with spinal irritation or not. On this view, of course, we would expect to find that these abdominal neuralgias were more common among persons and races of neurotic temperament, which, according to Dr. Allbutt, is a fact.

An inclination to the use of stimulants and narcotics is a very common *effect* of neurasthenia, as well as a *cause* often, each reacting to increase the other. I believe that most of the drinking, and taking of narcotics as a habit, of the present day, and especially among the educated classes, whose eyes are perfectly open to all the disastrous results, and among women, is owing to a greater or less degree of neurasthenia. The stimulant or narcotic gives instant relief from the dreary listless feeling which is habitual to such people. It gives a little brightness, energy, and feeling of well-being, which is so pleasant to those always feeling tired and used-up. It enables them to laugh heartily and to enjoy a chat with a friend, which without such aid is impossible. But then it increases all the symptoms as soon as the effect has passed, so that repetition becomes almost a necessity. Thus habit is formed, and thus very intelligent

people, who quite understand and are familiar with all the evils of intemperance, still drink, and some of them to the extent of becoming drunkards. On-lookers often consider them mad, or that the will is lost altogether; but both ideas are quite mistaken—the will is only so strongly in favour of drinking that all the many and weighty arguments against it have not power to outweigh the tendency. Sometimes neurasthenics can bear large quantities of alcohol without evident effect; sometimes a very small quantity causes a great effect. There are also many idiosyncracies among the class of neurasthenics as to various narcotic drugs, just as in the case of alcohol. Again, in cases where nerve-force is suddenly and largely lowered, there is usually inability to bear large quantities of narcotics of any kind. I suppose every smoker has noticed that his consumption of tobacco is a kind of barometer to his bodily condition. A man can smoke more the better his form; he can smoke much more in the open air than indoors without any unpleasant symptoms of nerve-depression appearing; and any man not sea-sick can on a voyage consume about double his land allowance. This is a common observation among those at sea.

With regard to alcohol, although there are notable exceptions, I think the common experience is that if a man is thoroughly and suddenly brought to a state of nerve-exhaustion, as by a heavy night of drinking, and if next day he endeavours to tone himself up for business, that a very little alcohol is sufficient to quite upset him again—far less than was originally required. The premature baldness and grayness so very common at the present day, and also the premature decay of the teeth, I look on as the result of some disturbance of innervation, and consequently of nutrition, in these tissues. In support of the idea that these affections belong to neurasthenia, we have a long list of bald emperors who were notable for dissipation—Galba, Commodus, Tiberius, Claudius, Henry III. of France, &c. Drunkards, phthisical people, and masturbators, are very frequently prematurely bald, at all events; and Anstie, in "Reynolds's Medicine," tells us how facial neuralgia causes grayness of the eyebrow and hair on the affected side of the head.

Everyone who has gray hair has noticed that the grayness varies from day to day according to the varying nervous vigour and general condition. In his "Surgical Pathology," Sir James Paget gives similar evidence. He says no tissue, indeed, seems to be wholly exempt from the influence of the nervous force on its nutrition. He tells of a lady, subject to nervous headaches, who finds

the next morning that patches of her hair are white; in a few days the hairs gradually regain their dark colour. Most authors give excesses in "Baccho et Venere" among the causes of baldness; and Von Bärensprung is of opinion that failure of nerve-force is the chief cause of baldness. Voigl has shown that baldness takes place in definite areas where certain cutaneous nerves are distributed. He found that the hair had not grown on the parts supplied by the sciatic nerve four months after he divided it in a rabbit. Romberg said that in facial paralysis baldness took place over the affected branches. Copeland says that baldness is often an indication of premature exhaustion of organic nervous energy. With regard to sexual excess, Plautus says, "Calvus non est eunuchus." One of the most common and distressing symptoms of neurasthenia is a feeling of great and general exhaustion and unfitness for work or duty of any kind. This, perhaps, comes on suddenly, and especially if the patient is called upon for any extra exertion or responsibility. There is also a feeling of helplessness in face of any danger or emergency, which is worse than physical pain. Local disturbances of innervation and circulation—such as sudden redness of the ears, or one ear, face, hands, &c.; fibrillary contractions of one facial muscle, usually the orbicularis palpebrarum; cold hands and feet, or nervous coldness all over, are all symptoms common enough, and seen variously combined in different cases. By nervous coldness I mean the objective and subjective feeling of cold without fever—*i.e.*, rise of temperature shown by the thermometer, which distinguishes this symptom from a rigor, &c.

The symptoms more connected with spinal exhaustion (myelasthenia) are—first, tenderness of the spine in its whole length, or in spots. This may be accompanied or not by spinal irritation, meaning thereby, the various reflex pains and visceral disturbances and partial paraplegia (mostly in young women) which may exist along with spinal tenderness, or be evoked by pressure on the tender vertebral spines. By the way, in young women more particularly, we should be very careful about how we press on the vertebræ, in examination, as the symptoms we evoke—as palpitation, vomiting, nausea, various abdominal neuralgias, &c.—may remain very intense for hours or days. Indeed, Dr. Brown-Séquard has seen severe pressure produce agonising pain, and even convulsions, which put the patient into an alarming state for days. Spinal irritation is merely a symptom of neurasthenia most centred in the cord, and may speedily be removed by blisters, galvanism, or the actual

cautery. But often, when all tenderness is removed, and even all reflex pains, the patient is not cured—the general state, or the other symptoms, remaining unaltered. Space would fail me to give any proper account of the symptoms of spinal irritation; but it is not needful to do so, as this is the form of neurasthenia which has received most attention. The work of the Griffens remains the best on the subject; but Dr. Brown-Séquard goes quite sufficiently into detail. It is much more common in women, but by no means confined to them, as nearly all sexually-exhausted males complain more or less of it. Much confusion still exists as to the relation of neurasthenia and spinal irritation. This is seen even in the recent works of Rosenthal and De Grasset. Erb does not regard them as identical; but he admits we require a better division and classification of these spinal neuroses, in order to promote the study of such an obscure subject. Erb thinks that neurasthenia (spinal, I suppose, he means) is essentially for the male sex that which corresponds with spinal irritation in the female. But in spermatorrhœa we have characteristic spinal irritation combined with nearly every other symptom of general neurasthenia; so that it seems to me the confusion consists in trying to make spinal irritation a distinct disease. The only point of any great importance about spinal irritation, as a separate form of neurasthenia, or a separate disease, if proved to be so, is its diagnosis. The following are the important points:—Tenderness on pressure, or spontaneous pain of the whole or parts of the spine; present in irritation, absent in all organic diseases, as spinal meningitis, myelitis, or congestion, acute or chronic. The only exception is caries of the vertebræ, where spinal tenderness is present, also pain midway between spine and sternum, and in the epigastrium, or bowels. These three spots of tenderness M. Briquet called "le trépied hystérique," or tripod on which the diagnosis of hysteria rests. In vertebral caries we may also have cough, oppression, or tightness round chest or waist, as in spinal irritation, and in both relieved by reclining. Indeed in spinal irritation there may even be a yielding and projection of the tender vertebræ, with some puffiness of skin over them, which resembles, in no imperfect way, the earlier stages of caries. But Griffen points out that vertebral caries attacks the young, and, most frequently, those under puberty, who are least of all subject to spinal irritation; that curvature, when attacking young girls, is seldom accompanied by symptoms of a purely hysterical character, while any serious irritation of the cord can hardly exist without them; that the apparent prominence

of tender joints, sometimes seen in spinal irritation, is never strictly angular; for if four or five joints seem to project, the prominence is nearly equal in all, whereas in caries it is greatest in the middle.

Absolute paralysis of limbs is a frequent consequence of caries, never of irritation; and there is no look of serious organic disease, which is present in caries. The constitution of the patient is also a guide, as in the one case it is neurotic, in the other a scrofulous or a lymphatic temperament is usually found, and both diseases are hereditary. Tenderness should be regarded as pathognomonic of spinal irritation, for in the few cases of spinal meningitis, myelitis, or spinal congestion, in which it is met with, there is reason to believe it may be accounted for by the association of irritation with congestion or inflammation. Anyhow, it is the rule that spinal irritation without inflammation or congestion is accompanied by tenderness, and that spinal inflammation and congestion, without spinal irritation, is not accompanied by spinal tenderness. Tenderness may be absent in spinal irritation, but not often—the Griffens found only five such cases out of 148; but it is very unequally present in different cases. It is much less marked in cases characterised by spasm and prolonged muscular contraction, than in cases where irritation shows itself by pain. Spinal tenderness is quite absent in tetanus, but, of course, we can excite a spasm, by pressure, there as elsewhere. In spinal irritation there is no true paralysis of limbs, bladder, or bowels; no steady numbness. The symptoms are variable and inconstant. The treatment of irritation as a local affection is local depletion by leeches and counter-irritation by blisters to the tender spots, according to Mr. Teale, who first wrote anything of importance on the subject. Dr. Radcliffe, in "Reynolds's Medicine," says the blisters cure alone, with rest at first but not too long, and quinine, iron, and cod-liver oil. But local galvanism is, perhaps, the best single remedy; and the best possible general or combined treatment, the plan of Dr. Weir Mitchell, of perfect rest, forced feeding, massage, and electricity. Functional derangements of the heart and pulse are rather interesting phenomena of neurasthenia. They are very important, too, as involving a sometimes difficult diagnosis from organic heart disease. These symptoms are mostly combined with spinal tenderness about the upper or middle dorsal. When we consider the nervous supply of the heart: the blood-vessels supplied with vaso-motor nerves which are connected with the spinal cord, the heart also with the vagus, its interstitial ganglia and depressor nerves, we cannot wonder that in neurasthenia the heart is so frequently disordered. The action is

rendered morbidly rapid or slow through reflex irritation, especially from the prostatic urethra, or from the brain through uncontrolled emotion, or from the stomach through any irritation there. This is true of the whole vascular system, of course not so plainly. The vessels down to the capillaries are liable to morbid relaxation or contraction, by reflex action, through irritation anywhere; so we have local anæmias and hyperæmias here and there, as the result of faulty innervation. These local anæmias and hyperæmias are often said to be the causes of the nervous symptoms manifested. Probably a slack artery and full vein is the most frequent condition in neurasthenia. The supply of blood to different organs is thus constantly liable to variation, under the influence of numberless slight causes which would not affect a person in health. Hence the inconstancy of the symptoms, and the sudden change of one state for another. A great number of the multitude of symptoms may be due to local anæmias and hyperæmias, but the faulty condition of the nervous system underlies them all, so that it is not correct to call these symptoms by names merely indicating the condition of the blood supply, which is itself only a result of a more general affection. In many neurotic families several members may have, for years, visible pulsations of all superficial arteries, very closely resembling the pulse of aortic regurgitation, called Corrigan's pulse, the water-hammer, locomotor pulse, &c. I know a gentleman who, for many years, has had this form of pulse very strikingly marked; yet there is no cardiac murmur, no cardiac enlargement, no hardness or atheroma of arteries, he never had rheumatism or syphilis, and there are no other symptoms of heart disease, except occasional palpitation. The symptom also in this case varies, being made much more prominent by any cause of nerve exhaustion. In diagnosticating such a case from organic disease, besides the above negative points we should remember that visible pulsation is a symptom of *advanced* regurgitation, that it *indicates danger*, and that Dr. Broadbent tells us that the second sound (murmur or no) is always lost in the neck before the stage of danger sets in, in aortic regurgitation. In neurasthenia the physician can, in fact, make nothing of the pulse, as it is liable, by the mere excitement of an examination, to run up to 110, or more; to become irregular, or vibratile, or even intermittent; so that if the physician depended on it, he might believe almost what he pleased with regard to the heart and circulation. In exceptional cases the pulse is very slow, 40 or less, or the rate may alternate between very slow and very fast. Sudden nervous tremors are liable to be brought on by any extra

exertion, and local spasms, and especially fibrillary contractions of muscles, such as occur in progressive muscular atrophy; also cramps of muscles at night. In other neurasthenics we have extra sensitiveness to cold, and to changes of weather; local numbness and hyperæsthesia; general pruritus, especially at bedtime; extra susceptibility to tickling; frequent and causeless blushing; fidgetiness and inability to keep still; local perspirations of hands and feet; and even inclination to sweat all over, on very slight cause. It is well known how want of condition causes too easy sweating, even in the healthy. The trainer knows that his horse, or man, is not in good form when sweating is too easily induced. Everyone knows in his own person how any excess, or anything exhausting, will make him liable to sweat easily for some little time, until he recovers his nerve-force. Golding Bird pointed out, long ago, the relation of oxaluria to great nervous depression. We also have in mal-nutrition of the nerve tissue, deposits of phosphates, urates, and at times spermatozoa in the urine. Then functional diseases of the reproductive organs, in both sexes, owe their origin to neurasthenia, at least as often as neurasthenia owes its origin to irritation of the reproductive organs—very often, though, both are present, acting and reacting on each other. Functional impotence is extremely often associated with general neurasthenia, and often calls for no separate treatment further than that required for the general affection, with, of course, reform of habits where required. Ovarian and uterine irritation (congestion) and neuralgia, often belong to the same category. In connection with the latter remarks, we may notice the fact, quite established, that neurasthenia in all its forms occurs between the ages of fifteen and sixty years; the active sexual period in the male. The liability, in the female, ceases when the health is once re-established after the menopause, about forty-five years. Infants and children are remarkable for the number of nervous diseases they are liable to, but they never have neurasthenia; the same may be said of the aged.

From the nature of their studies and duties, medical men are very liable to neurasthenia, particularly in the form of pathophobia. I suppose no medical student has got through his studies without fancying he had several serious diseases in succession. The more the medical man keeps up with the times, especially as to nervous diseases, the more liable he is to fall into some morbid fear as to his being incapacitated for his duties by some form of paralysis, ataxy, or cerebral softening. It is thus important for him to know neura-

sthenia well on mere personal grounds. Besides, it may eventuate in confirmed melancholia, general flying neuralgia, inebriety, meconism, chloralism, or some form of mental derangement; and in females, hysteria and hystero-epilepsy, trance, and exophthalmic goitre, which is a neurosis of the sympathetic. In itself it is no small evil, causing much unhappiness and discomfort to the patient, and rendering him a nuisance to his friends, by inducing depression, irritability, or moroseness. But in order to recognise neurasthenia one must be familiar with all the nervous diseases, as the diagnosis must rest on the exclusion of all organic disease, and it is obvious that the accuracy of the diagnosis will rest on the ability of the physician to exclude organic affections. From want of sufficient knowledge or familiarity with modes of diagnosis, practitioners are sometimes unable to reach the diagnosis by exclusion, either in their own cases or those of others, and so allow existing delusions to become more firmly established. If we know the thing the name does not matter; but neurasthenia is called, or, perhaps, usually parts of it, by all kinds of names—hysteria, anæmia, hypochondriasis, general debility, nervous prostration, and spinal weakness. Some make a more special diagnosis—spinal irritation, spinal anæmia or hyperæmia, cerebral anæmia or hyperæmia, while some men who have an excellent idea of the general features of the complaint have no name at all for it That it may last many years is well known, but it does not seem to pass into organic nervous disease. Erb doubts whether it can pass into any tangible form of myelitis, sclerosis, or gray degeneration; but he says, if the patient be a physician he is apt to dwell on this anticipation, and be made wretched by the thought. In making a diagnosis, we should remember that in the functional disorder the symptoms come and go, change their site, and recur again, without cause. Symptoms of organic disease are usually more steady and fixed. Reflex activity is nearly always increased in neurasthenia, usually diminished in organic disease. There is the multitude of symptoms in neurasthenia, and some of these do not often occur in organic disease, especially the morbid fears, self-distrust, bashfulness, hopelessness, and insomnia. A man with paralysis or other gross nerve-lesion often sleeps as well, and is as hopeful, as in health. There is the patient's temperament to be considered. Fine skin and hair, delicate features, and neat hands and feet, mark the neurotic; and, as a rule, we do not meet with gross nerve-lesions in these sensitive neurotic people, except, perhaps, as the result of syphilis or alcohol. Organic nerve-lesions occur in the opposite kind of

temperament more often. Races more inclined to the neurotic temperament have less organic nerve-disease than others. The neuroses, as a whole, are nearly absent in both very cold and very hot climates, while organic nerve affections, as hemiplegia, are as common as in the temperate zone. Perhaps there is some connection between this fact and another, that neurasthenics are usually much benefited by hot climates. Neurasthenia is important to the medical man, as it causes difficulties in diagnosis and prognosis by modifying nearly every other disease the patient may take, giving an asthenic character to the case from the first, and making the forming stage of many complaints look like that of some much more serious disease. I know persons who, on the slightest illness, such as acute indigestion, or even a feverish cold, will have a pulse hammering away at 120 or so, great prostration, and, perhaps, a brown streak down the centre of the tongue, so that anyone not aware of the peculiarity would fancy a severe fever was setting in.

Some believe that neurasthenic symptoms depend on anæmia or hyperæmia of brain, or cord, or both; but, granting the existence of such conditions, they themselves must depend on prior change in the centres, or exhaustion of these centres—in fact, innervation must precede circulation. Erb says the anæmic and hyperæmic theories are unsatisfactory, and that it seems most natural to recur to fine disturbances of nutrition, such as we are still obliged to assume in so many diseases of the nervous system. Some, again, say neurasthenia is only another name for general anæmia. Certainly, the two diseases frequently co-exist, but neurasthenia may exist quite independently. Anæmia appears in the scrofulous, tubercular, and rheumatic, who rarely have neurasthenia. Anæmia is found at all periods of life from infancy to old age. Neurasthenia is limited to the middle period of life; it is not dependent on organic disease, such as tubercle, carcinoma, Bright's disease, &c., as anæmia often is, nor is there any cardiac murmur or necessary pallor, nor can it be cured by iron alone. Neurasthenia may, like anæmia, lead to hysteria, but hysteria is a distinct condition; it is practically confined to females; but neurasthenia, although most common in women, is found abundantly in both sexes. Hysteria may occur in a strong full-blooded woman with no symptom of neurasthenia, and, unlike the latter, hysteria was more prevalent in mediæval times, as were also true hypochondriasis, and various nervous epidemics. Neurasthenia is always associated with physical debility; hysteria may occur in perfect health. The prognosis in neurasthenia is usually good; the majority of cases can

be perfectly cured; but as any slight drain on the nervous force, which would not harm many, is liable to cause a relapse, patients who have had neurasthenia must always be more careful than others to avoid all causes of nerve-depression. There are cases, however, where such a prolonged and excessive call has been made on the nervous energy, even by excessive and constant attention to business, especially speculation and gambling, that the patient never, during his whole life, regains the normal nerve power, either in quality or quantity. We require a reserve stock of nervous force to meet the extraordinary, as well as the ordinary, demands of life if we would avoid attacks of neurasthenia. This can be secured only by limiting the expenditure, by affording proper periods of rest to permit of recuperation, and by keeping the assimilative system in a condition to profit by appropriate and sufficient nutritive material to keep the nerve centres well nourished. An essential element in the causation of neurasthenia seems to be an especial assimilative debility in the nerve centres, whereby they cannot appropriate sufficient nutriment to themselves, though it may be circulating in abundance, and though all other tissues may be well nourished. This is one of the objects of treatment to remove.

Treatment.—The first and most important part relates to causation. We should endeavour to procure complete rest from exertion and worry, and all other sources of undue expenditure of nerve force. Bad habits of every kind are to be sought after, and reformed. Measures to invigorate the whole system are of great value—out-of-door life, sea-bathing, nutritious food, the sponge-bath, and tonic medicines, occasionally varied and long continued, are all very useful. Where there is inability to sleep, bromides in 30 gr. doses shortly before bedtime are useful. It is not desirable to advise relinquishment of business permanently. After a rest sufficient for recuperation, a return to the usual avocations is advisable. Of course, these must be then carried on in moderation, and with due regard to the laws of health, and mental anxiety and worry should be carefully avoided as far as possible.

The treatment should never be confined to any one mode, but various plans should be combined. It should be constitutional, but whenever local symptoms are severe they should receive local treatment. But it can never be rational to devote the attention wholly to local symptoms and phases of the disease, and to leave out general management. No two cases are exactly alike, so that each case must have a plan of treatment laid out for itself. Drugs must be

combined with hygiene. In cases of pure brain exhaustion, nothing so freshens up the mental powers and the spirits as plenty of strong exercise, especially in the shape of gymnastic effort. In purely spinal cases, on the other hand, all extra effort is most injurious, and complete rest for a time is most important. This is the most reliable point of difference between the forms, and if forgotten the treatment is very apt to prove injurious. As regards diet, it must be very nutritious, and fats and oils must be given as freely as the digestive organs will permit of. I think it is now generally admitted that fats play an important part in general nutrition, and especially in that of the nervous system. As formers of force, nerve, muscular, and secretory, and as being essential to the building up of healthy, tissues, they are simply indispensable. We know that wherever cell growth or change is going on, there is sure to be abundance of fat. The brain works by the decomposition of complex nitrogenous fats. These being oxidisable hydro-carbons, easily undergo decomposition, and so have a high value in potential energy, which becomes actual during function by their decomposition in the substance of the nerves, so that, as Prof. Maudsley says, "without oxidation we can no more have thought from brain than we can have flame from fuel." A conspicuous element of brain, nerves, pus, semen, white blood corpuscles, yolk of egg, &c., is lecithin, $C_{44}H_{90}NPO_9$. This is a nitrogenous phosphorised fat, and the fact of its containing phosphorus has given rise to a great deal of theory about phosphorus being a necessity for thought, and for the nutrition of the brain; and also to the theory that phosphorus is a complete cure for all such conditions as neurasthenia. Of course it is a necessity to proper feeding of the brain, but so is nitrogen; but it does not seem that large quantities of nitrogenous matter have ever been advocated as curative of brain debility, or as a necessity to brain activity. As far as my experince goes, I fancy that phosphorus is not a very striking remedy for neurasthenia, though no doubt often very useful; and I fancy if the nerve centres are in too feeble a state to appropriate the elements required to manufacture lecithin, the debility may not be removable by supplying these elements in extra quantity. The case is different with fats, as all experience shows that we cannot do without them any more than without nitrogenous food; but the system gets its phosphates abundantly from an ordinary nutritious diet—from cereals, eggs, and fresh meat.

In cases where the stomach is very weak and irritable we should resort either to peptonised food, to very frequent feeding, very small quantities at a time, as suggested by Brown-Séquard, or to rectal

alimentation. The frequent feeding is very useful where neurasthenic dyspepsia is prominent, as the stomach is always relieved by food. The drugs useful in these cases are principally, strychnine, picrotoxin, arsenic, opium, conium, phosphorus, digitalis, ergot, belladonna, cannabis indica, caffein, zinc, cod-liver oil, and iron. Opium in small doses is very useful, and nothing relieves the feelings of misery and exhaustion better; but from danger of the opium habit, to which these patients are prone, it should be avoided. Dr. Allan M. Hamilton, New York, favours opium. Dr. Hammond uses strychnine in spinal irritation, with a view to flush the nervous system with blood, as he believes the pathological condition is anæmia of the posterior columns of the cord. Picrotoxin in doses of $\frac{1}{50}$ to $\frac{1}{100}$ of a grain is also used by him with a like purpose. Strychnine is a stimulant to all nerve centres, and acts rapidly in conditions of depression. It especially stimulates the respiratory and circulatory centres (Prokop, Rokitansky, Fothergill), and has a very great influence in arresting profuse perspiration, as Lauder Brunton thinks, by its exciting the respiratory centre and powers. These various actions may increase the metabolism going on in the cerebro-spinal tissues, and aid in the removal of effete matter. Arsenic is a remedy of great value in this disease. It should be given in moderate doses, and persevered with for a length of time, with intervals. It is often better to combine strychnine and arsenic. More especially in neurasthenic dyspepsia and the whole class of abdominal neuroses it is the most efficient drug. Dr. Clifford Allbutt says he does not know what physicians did with these cases before the use of arsenic for such came in. Arsenic seems therapeutically to be equally useful with phosphorus in nervous cases and to have nearly the same action. It causes a feeling of lightness of spirits, buoyancy, and well-being which is extremely useful in neurasthenia. Large doses of arsenic and phosphorus produce the very same effect—*i.e.*, fatty degeneration of the principal organs. Arsenic is much cheaper, handier, easier of management, and safer than phosphorus; for these reasons I usually prefer it. Phosphorus relieves the feeling of exhaustion like any other stimulant, but I believe it is over-praised in neurasthenia. The same remarks will apply to all the phosphates, phosphites, hypophosphites, &c. In cases of sexual exhaustion Ringer recommends small doses of morphia to relieve the weakness and misery, and certainly it does so much better than a phosphorus pill, and for as long a time. But in such cases there is no remedy, except local galvanism, so good as Neligan's old prescription of a pill containing 2 grs. of zinc sulphate

with ¼ up to 1 gr. of extract of belladonna, twice or three times daily. This ameliorates the whole train of symptoms in a wonderful way, and markedly diminishes the tendency to masturbate. Atropia or belladonna, in as full doses as can be comfortably borne, is the only remedy which has much power in checking prostatorrhœa, which is usually called spermatorrhœa. It seems to diminish the formation of abnormal quantities of mucus in an irritable prostate, as it does abnormal loss of sweat or saliva. Iron and quinine are very useful in many cases of neurasthenia, especially if anæmia co-exist, but they will hardly ever cure by themselves, and, like phosphorus, have been over-praised. Ergot and digitalis are useful where the tone of the blood-vessels is much relaxed, and in nervous headaches both drugs are very successful. But caffein is more generally useful and more powerful in the same direction almost, as it makes digitalis much more powerful for good in mitral heart cases, by steadying an irregular heart, contracting the vessels, and causing profuse diuresis, sometimes where digitalis has failed. Conium, according to Brown-Séquard, is an agent affecting the circulation in the brain and spinal cord, and as a paralysant of voluntary muscles by its effect upon the afferent spinal nerves, it has not yet attained the high place in general practice it deserves. He gives it in full doses of the succus, and thus given it is very efficient in spinal irritation. Alcohol, chloral, and even the bromides should be avoided as much as possible, as, just because of the great relief they give, there is the danger of forming the habit of their use. Drugs, however, are not the most important part of the treatment.

Counter-irritation by means of very small blisters, by means of slight applications of the actual cautery to the spine regularly (electric or gas), and especially galvanism to the spine, are all most important. Dr. M'Call Anderson ("Clinical Lectures," 78) considers blisters and leeches the most efficient means of cure in spinal irritation, and says they rarely fail. Dr. Hammond considers the leeches harmful. Dr. Armingaud, of Paris, agrees with M'Call Anderson. But galvanism is more generally useful and more powerful as a remedy than counter-irritation. Either current, galvanic or faradic; either pole, upwards on the spine, negative or positive; any direction of current may be used, and besides being an efficient counter-irritant, it modifies general and local nutrition, so as to produce tonic, sedative, and stimulating effects. If there is a special or local disorder, as prostatic or ovarian irritation, local galvanism will be attended with the best results. Vater, Benedict,

and Erb in Germany, Mitchell and many others in America, recommend the galvanic treatment, and note good results.

Massage, or systematised rubbing and manipulation, which really dates back to Hippocrates and Celsus, was first made scientific by Ling, of Sweden, in 1813, and revived in interest by Dr. Mezger, of Amsterdam, a few years ago. It is now brought to full perfection by Dr. Weir Mitchell, New York, as a part of his system of making fat and blood, which is also recommended and practised by Dr. Playfair, of London. It is a most excellent, though not indispensable, aid to the treatment of neurasthenia, especially in bed-ridden cases, and myelasthenia where exercise cannot be borne. For details Dr. Weir Mitchell's little book should be consulted. The system of isolation which Mitchell, Charcot, and others insist on is also very valuable, and indeed indispensable in many cases. But the most valuable of all plans of treatment where it can be adopted is the full Weir Mitchell plan of complete rest, isolation, overfeeding, massage, and electricity. I think every case could be cured in this way. But, if the patient cannot have this, a modification of it (medication, hygiene, massage, and electricity) succeeds remarkably, and nearly any case can be entirely cured. Travelling may be very useful to neurasthenics, and prove a really curative agent; but, if the case be spinal, or if spinal symptoms predominate, sightseeing and land travelling generally may do a great deal of harm. A long sea voyage is quite free from this objection, as there is no place one gets more perfect rest if desired—indeed, the only drawback to the ocean as a health-resort is the difficulty the ordinary invalid has in getting sufficient exercise. I remember meeting, on a Transatlantic steamer, a lady whose husband was a railway king and governor of one of the most flourishing western states of America. He, she, and their son were crossing the Atlantic to Europe in search of health for the lady. They were accompanied by a regularly qualified American physician, at a large salary, who informed me that this was the third trip to Europe on the same errand, also that he had been constantly resident in the family for some years back. The lady was a blooming and portly figure with a large frame, but as good a specimen of general neurasthenia as I have ever seen. It was only at times that she could be persuaded to attempt walking at all on account of spinal irritation; but sometimes she could walk, and pretty smartly too, especially when any little thing occurred about the ship to make her nervous she forgot her inability to walk, and the cerebral symptoms became prominent. At all times her brain

was in such an irritable and morbidly mobile state that the slightest annoyance, alarm, or any excitement, caused her to behave like a madwoman. It may be supposed that she was not much appreciated as a travelling companion. Nearly every night she roused up the stewardess and her medical attendant to tranquilise her mind and assure her the ship was not in danger. But still she stuck to her specially-imported green tea, which cost, I believe, something like 28s. per lb., and which was probably the cause of her illness. She had general tremors as bad as most chronic alcoholics. I dare say she is still *being cured*, unless Weir Mitchell has chanced to get her under his *thumb*. When neurasthenics travel for health they should, as a rule, go to hot or even tropical climates. A great proportion improve greatly by such a course. Australia and even India, the West Indies, the Fiji Islands, Egypt, Algeria, the south of France, and Italy, are all likely to prove beneficial to a great number. Mountains or plains more than 3,000 feet in height have usually an injurious effect, although some cold climates answer very well. Out-of-door life is very useful to all, and combined with plenty of exercise where the symptoms are chiefly cerebral. Exercise is also beneficial in spinal cases when some improvement has taken place, but the latter must have frequent long rests. In sexual cases, particularly in the male, where there is usually more or less prostatic irritation, horse exercise and bicycling, &c., must be forbidden entirely, as they would add so much to the local irritation as to more than counterbalance the good otherwise to be derived from the exercise. Many ladies with functional uterine derangements are also made much worse by horse exercise. For many, both male and female, the exercise is much too severe without any local irritation.

The treatment of neurasthenia in its acute forms, and where it occurs as a complication of acute disease, where there is sometimes great danger to life, more through the complication than the disease—now demands a few words. These conditions, if severe, demand the treatment of collapse, and of states attended with much fall of temperature—heat applied externally by bath, or dry heat, and supplied internally by very hot milk, which is a grand restorative; alcohol hot in moderation; atropia or belladonna which, by its stimulant action on the respiratory, circulatory, and other centres, increases bodily heat, respiration, and circulation; strychnine, digitalis, and carbonate of ammonia, which also increase respiration and circulation; frictions to the whole surface to help on circulation; rest in the horizontal position; local heat and stimulation to the heart, as by

a large and hot linseed and mustard poultice; the same local stimulation to the nucha; and avoidance of all depressants to nerve-force, circulation, and blood-pressure, as chloral. The temperature falls as respiration and circulation fail in power; but the loss of heat still further enfeebles the nerve centres concerned, till, as the result, death occurs. Fall of temperature is an important element in the causation of death in chloral, opium, alcohol, and aconite poisoning; in death by starvation (the immediate cause), by exposure, by burns, and after immersion in water. By keeping up the bodily heat, and by counteracting the acute loss of nerve-force, which progress together, the one both causing and then increasing the other, we might save many lives.

The subcutaneous use of ether and alcohol, now so much resorted to in collapse and hæmorrhage, is an important application and illustration of this principle. But ether subcutaneously will often fail permanently to rouse or benefit a man who has been poisoned by alcohol or chloral, but who is actually perishing through extreme fall of temperature. The collapse from burns, where the patient shivers as if in an ague fit and keeps calling out for heat, although perhaps complaining but little of pain, should be met with atropine in large doses and hot milk internally, with artificial heat externally. In America belladonna and digitalis are much used in such cases of acute loss of nerve force. Who has not seen cases where, after a very severe chill or wetting, a man has been able by the aid of a glass of hot spirits and a hot bath to avoid, in all probability, a serious congestion, inflammation, or other serious illness? The external and internal heat and stimulus rouse the partly paralysed nerve-centres, consequently the blood is propelled to the surface again, and any dilated vascular area allowed to empty itself and recover its tone before complete paralysis of vessels, and blood stasis, have occurred. In acute diseases, again, death often takes place through acute nerve-depression, before there is any structural change sufficient to cause it. In the hackneyed example of pneumonia, death most frequently takes place from failure of the right heart, and formation of clots within it. Of course there is the physical obstruction to free circulation through the lungs, and a greater than normal tendency to the formation of clots, to embarrass the heart; so that in every case of pneumonia there is more or less danger from heart failure. But, then, what is the difference between a patient who dies of heart failure, and one who never seems in danger? Surely it is a difference in nerve power; and, whenever we see the slightest indication of cardiac

debility, such as the pulse becoming frequent, out of proportion to the temperature, or becoming smaller and more frequent, as compared with previous observations, we ought at once to try to rouse the nerve-centres by some of the means alluded to above. All authors mention, as the first indication in the treatment of all acute diseases, "to obviate the tendency to death." I venture to express the opinion that this indication is best met, in a very large number of cases, by close attention to the state of the nervous system. We should watch for the first indication of its giving way, as by delirium; by extreme temperatures in febrile cases; rise of the pulse with smallness and softness as compared with the previous day, or out of proportion to the rise of temperature; dry or brown tongue; great general prostration; and many other well-known signs of nervous failure. Any of these symptoms should be vigorously treated before the state becomes alarming. It is said to be a rule that, in febrile diseases, blood-pressure in the arteries and body temperature stand in an inverse proportion to each other—that is to say, that while the arteries retain their tone there is no great rise of temperature, which occurs only when the pulse is soft or small or both, and the blood-pressure low. If the rule holds, it might help to explain the very decided action digitalis has as an antipyretic. Digitalis contracts the small arteries and increases blood-pressure, and so would control rise of temperature.

ART. X.—*A Case of Tetanus Infantum Successfully Treated.* By HENRY DAVY, M.B., M.Ch., Univ. Dublin; Fellow of the Academy of Medicine, Ireland; Medical Officer of Crumlin and Terenure Dispensaries, Co. Dublin.

As the recovery of so few children from this very fatal disease has been placed on record in this country, I wish to bring the following case, which was successfully treated by me, under the notice of the profession:—

CASE.—About the middle of January, 1884, I was consulted by a Mrs. B., of Crumlin, a fine, strong countrywoman, a labourer's wife, who has been eight years married, and the mother of five healthy children, about her infant, who had become very ill with fits some days after its birth. On the 12th of January, 1884, Mrs. B. was confined of her youngest child, a strong, healthy female infant (the subject of this paper). Her labour was natural and quick, and, according to her account, was only of an hour and a half duration. The child appeared to be quite well till

the seventh day after its birth, when it became fretful and would not suck, and refused to take the breast, and it seemed to be in pain when attempts were made to nurse it. It uttered a whimpering, whining, unnatural cry, and became quite livid in the face; the head, neck, and body were thrown backwards, and became quite rigid, as occurs in opisthotonos. The child's mouth was rigidly closed, owing to the spasmodic action of the masseter muscles, so that it required considerable force to introduce the finger into the mouth, which was pursed up, and from which frothy saliva issued during the tetanic paroxysm, and while this lasted, the mother, in her attempts to feed her infant, could not get the point of a teaspoon into its mouth, and every attempt to feed it only aggravated its sufferings, and brought on violent spasms, whereby the greater part of the food taken was expelled from its mouth. The hands were tightly clenched, the thumbs being drawn across the palms of the hands; the thighs and legs were flexed on the body, the great toes being abducted while the others were flexed. The bowels were inclined to be costive, and the urine was scanty. The child's cry was a peculiar, suppressed whine, which is so characteristic of this fatal disease. The umbilical cord fell off on the fourth day after its birth; the navel itself looked healthy, but was slow in healing, and bled a little on the fourteenth day, from the force of the child's crying.

The following treatment was ordered:—The food consisted of a teaspoonful of brandy, one-third of a teacup of fresh cow's milk, mixed with two-thirds of a teacup of water, slightly sweetened, to be given warm out of a spoon, a little at a time, during the intervals between the paroxysms. The mother usually managed to get down about three teacups of milk and brandy, prepared as above, in the twenty-four hours, by feeding the infant shortly after it awoke from sleep, induced by taking a dose of the following mixture, and which she considered "a grand bottle, as it always quieted the child:"—

℞. Chloral hydrat.
Potass. bromidi, āā, ... gr. 16
Ext. ergot. liq. (Long's), . . . ♏ 48
Glycerini, ... ʒ iii.
Aquæ destillat, ... ad ʒ iv.
Ft. mist. M.

A teaspoonful to be given every third hour, representing chloral hydrate and bromide of potassium āā gr. ½ and ext. ergot. liq. ♏ 1½ in each dose. After taking a teaspoonful of this mixture, the child used to fall into a sound sleep for about three hours, and then awake up refreshed, and comparatively free from the spasms for a few minutes. This treatment was steadily continued for fourteen days, when the child commenced to take to the breast again, and from this time there was a very gradual, but

steady, improvement, which ended in ultimate recovery. The child is now nearly 1 year and 7 months old, and is one of the strongest and healthiest children I have in my district.

Tetanus infantum, or trismus nascentium, or neonatorum, as it is sometimes called, may occur any time after birth; from twelve hours, to twelve or even fifteen days, but generally within the first nine days from birth, hence it is called "the nine-day fits."

The following are stated to be its remote causes:—Impure air, uncleanliness, imperfect ventilation, wet and cold weather, variations in the temperature, intemperance, poverty, &c. I have never met a case of this disease amongst the better classes of society. Its proximate causes are said to be due to inflammation, suppuration, and ulceration of the umbilical cord and its vessels, improper dressing of the navel, spinal meningitis, &c.

Dr. Marion Sims states that "trismus nascentium is a disease of centric origin, depending on mechanical pressure exerted on the medulla oblongata and its nerves, and that this pressure is the result most generally of an inward displacement of the occipital bone." M. Parrott, of Paris, considers that this disease is due to certain changes of the urine, brought about by a condition which he terms athrepsie, which is the result of artificial feeding of infants; trismus, according to this author, belongs to the same category as uræmic convulsions. As to prognosis, the majority of British authors state that they never met with a case of recovery from fully-established tetanus nascentium. Dr. Collins, formerly Master of the Rotunda Hospital, Dublin, remarks "that he never saw an instance where a child seemed even temporarily relieved by the measures adopted." The late Dr. Churchill observes "that a more intractable disease does not come within our observation." And Dr. West, of London, in the seventh edition of his work on the "Diseases of Infancy and Childhood, 1884, says "that when once the disease becomes developed, our prospects of cure are so slender that I may almost say the task is hopeless." Dr. Breen records two cases successfully treated by him, by small and frequently-repeated doses of tinct. opii, calomel, and castor-oil, &c. Dr. J. Lewis Smith, of New York, has collected 40 cases of tetanus infantum from different sources, 8 of which recovered; and he observed that in all of these cases, with two exceptions, the disease commenced about the seventh day, and that there was a fluctuation in the symptoms; whereas fatal cases ordinarily grow progressively worse, death usually taking place from three hours to four days, while in those cases which terminated

favourably, from the time the child ceased to nurse till it began to suck again, recovery took place in from two to thirty-five days. Out of 15 cases of tetanus infantum that occurred in my practice during the last ten years, this was the only case where recovery took place, and I always looked on the disease as incurable, as it had resisted every mode of treatment which I could devise till now.

The treatment of tetanus infantum is divided into the preventive and curative. The former is attained by paying attention to sanitation in the way of free ventilation; the observance of cleanliness in the bedding and clothes both of the mother and child; admitting air freely into the dwellings of the poor; carefully dressing the umbilical cord; attention to the food of the child and its bowels. Dr. Grafton, in the *N. O. Med. and Surgical Journal*, July, 1853, states that he has never known the disease to occur in a child whose navel had the turpentine dressing applied. He uses it as follows:—At the first time a few drops of undiluted oil of turpentine are applied immediately to the umbilicus and around the cord, and it is anointed at each succeeding dressing, the turpentine being diluted with one-half to two-thirds of olive oil, lard, or fresh butter.

The curative treatment.—When once the disease has developed itself, the infant should be kept in a darkened room, as quiet as possible, and the bowels be relieved by castor-oil, or an enema if it cannot swallow. It has been recommended, on account of the spasms, to put the child under the influence of chloroform, at regular intervals, and to feed it with mother's milk, cow's or ass's milk, diluted with equal parts of barley water, through an elastic tube, or flexible catheter, passed down the gullet; in this way 3 or 4 ounces of food may be given every three hours; with each quantity 5 to 15 minims of old brandy may be added. Various remedies have from time to time been recommended for the relief of this very fatal disease, amongst which I may mention—leeching the nape of the neck in the early stage; the spinal ice bag; the inhalation of nitrate of amyl, ether, and chloroform; opium in the form of tinct. opii, or Dover's powder, given in small and frequently-repeated doses; warm baths; enemata of assafœtida and tobacco, &c. Belladonna, or its alkaloid, atropia, in the form of the sulphate, given hypodermically, in doses from the $\frac{1}{200}$th to $\frac{1}{150}$th of a grain, has been employed with benefit in some cases. A tincture prepared from physostigma, or calabar bean, in doses of 2 ♏. given every two or three hours, has been recommended. Woorara, or curara, has been given in 22 cases, according to Demme, with 8 cures. This drug

has also been recommended by Harley, Spencer Wells, Broca, Vella, Chassaignac, and others, in doses from $\frac{1}{240}$th to $\frac{1}{120}$th of a grain, cautiously increased.

Dr. Gaillard records two cases of cure from the use of tinct. cannabis indicæ; in one case a baby eight days old took half an ounce of this drug in a single day.

The remedy which Dr. Lewis Smith, of New York, prefers to all others is the hydrate of chloral. Dr. Widerhofer, of Vienna (London *Lancet*, March 18, 1871), states that he has saved six out of ten or twelve cases of tetanus infantum by the use of chloral. He prescribes it in doses of from 1 to 2 grains by the mouth; but if there is great difficulty in swallowing, 2 to 4 grains by the rectum.

I would recommend a trial of bromidia, an hypnotic recently introduced to the profession by Messrs. Battle & Co., of London, composed of a combination of the following drugs:—Chloral hydrat., potass. bromidi, ext. cannabis ind., and ext. hyoscyam, in doses of from 2 to 4 ♏., diluted with a teaspoonful of water, to be given every third hour till the spasms were relieved, or the child went to sleep.

EXPLORATORY INCISIONS IN THE DIAGNOSIS OF ABDOMINAL TUMOURS.

TÉRILLON in the *Revue Médico-Chirurgicale des Maladies des Femmes* for May, in a paper read before the Society of Surgery of Paris, considers the subject of exploratory incisions for the diagnosis of abdominal tumours. He has collected 179 cases in which such incision was made: of these 39 died, and 140 recovered; and he, therefore, regards the "cures" as 79 per cent. But it is hardly just to consider exploration as a curative agency—it can only be said that exploratory incision was not fatal in 79 per cent. One interesting fact shown by Térillon's statistics is that an exploratory incision in malignant disease is very much more liable to be followed by death than if the disease be non-malignant. Térillon observes that an exploratory incision ought to have one end, to make the diagnosis clear for the performance of a radical operation. It is for the surgeon who undertakes it the first step in a laparotomy, that has behind it an unknown, which must be discovered before passing further. The exploratory operations collected by Térillon have been followed by a far higher rate of mortality than have those in the hands of Tait, Knowsley Thornton, Keith, Billroth, and other experienced operators.—*Medical News*, July 4, 1885.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON HYDATID DISEASE.

1. *Hydatid Disease, with special reference to its Prevalence in Australia.* By J D. THOMAS, M.D. (Lond.), F.R.C.S. (Eng.) London: H. K. Lewis, 136 Gower-street. Adelaide: E. Spiller, Government Printer, North Terrace. 1884. Pp. 219.

2. *Hydatid Disease of the Lungs.* By J. D. THOMAS, M.D. (Lond.). F.R.C.S. (Eng.), Physician to the Adelaide Hospital. 1884. Pp. 89.

THE first of the above works is chiefly concerned with the natural history, geographical distribution, and prevention of hydatid disease. The diagnosis and treatment of the malady are not specially discussed. It has long been known that echinococcus disease is very common in some parts of Australia. The countries in which it is most prevalent are Australia and Iceland. It has been established with great certainty that the disease known as "hydatids" in man and the domestic herbivora, is occasioned by the development of a special bladder-worm (Echinococcus) derived from the eggs of a small tapeworm (Tænia Echinococcus) whose usual habitat is the upper half of the small intestine of the dog.

The minute ova of the adult tapeworm are conveyed by some means, most commonly by drinking water, into the stomach of the future victim, and the contained embryos ultimately develop in its organs into hydatids. It may be regarded as certain that the *eggs of the tænia* must be taken into the body in order that hydatid infection shall occur in man; there is no evidence that the hydatid cyst or echinococcus heads of one host can directly produce an hydatid in another host, when swallowed by the latter.

As regards the hosts of the adult tænia, the only animals in which, up to the present time, tænia echinococcus has been found are the domestic dog, the wolf, and the jackal. Analogy would suggest its occurrence in the Australian dingo, but, as far as the author is aware, it has not yet been actually found in that animal.

For all practical purposes the domestic dog must be regarded as the direct source of hydatid infection in man and the domestic herbivora. The dog itself in turn receives its infection by eating the fresh viscera of animals containing hydatid cysts. The conditions for the cultivation of hydatid disease are as follows:—Given a country with many sheep, oxen,, pigs, &c., the organs of which are often eaten raw by the dogs, if the water supply be scanty and procured from bogs, swamps, waterholes, and dams, on the banks of which dogs may deposit the eggs, to be blown in by the winds or washed in by the rains, and if there be dogs in abundance—under such circumstances hydatid disease cannot fail to be prevalent.

From the tables which are given it is seen that in Iceland the number of domestic herbivora in relation to the human population is more than four times as great as in Great Britain, and that Australia has more than twenty-two times as many of these animals per 100 of population as the mother country possesses. As to the number of dogs, it appears there are, at the lowest computation, ten times as many dogs per head of population in Iceland as in Great Britain. As to the probable number of dogs in Australia no accurate information is procurable, but it is certain that the number is very great, and very far in excess of the usefulness of these animals.

Measures, suggested for the prevention of hydatid disease, are as follows:—Diminution of the number of dogs, especially of stray and ownerless animals. Prevention of dogs eating offal and viscera in abattoirs or butchers' premises. Security of the water supply from the invasion of dogs, their swimming or drinking in them. The tanks should be as far as possible protected from the entry of dust, as the eggs may be carried by the wind in summer into tanks protected from the direct access of dogs. Finally, filtration or boiling will greatly diminish the risk of infection by drinking water. The ova are of such dimensions that probably any good filter will arrest their passage through it.

The book is illustrated with five plates, and is a very compendious treatise on the subject it deals with.

No. 2, by the same author as the preceding, is a *brochure* confined to the consideration of hydatids of the lungs and pleuræ only. The lungs are, next to the liver, the most frequent seat of hydatid disease in man. There is a very marked preference for the right lung shown by echinococcus similar to that of croupous pneumonia for the same lung. It has been suggested that it is possible for the eggs of the

tapeworm to be conveyed by the respired air into the lungs, and that they may there directly develop into pulmonary hydatids without previously entering the digestive organs. Most authorities on the subject believe that the eggs must obtain entry into the stomach in order that their shells shall be digested and the enclosed embryo released. That the liver should be the most frequent seat of these cysts is because the embryos, after finding their way into the portal vein, here meet with the first obstruction to their passage through the capillary system; many, however, do find their way through and, in all probability, gain access to the lungs through the shorter and easier course of the pulmonary artery, rather than by the round-about course through the bronchial arteries. The symptoms of pulmonary hydatids are chiefly four—pain in the chest, dyspnœa, cough, and hæmoptysis. In the majority of cases, phthisis and pleurisy with effusion are the diseases likely to be confounded with hydatids. The expectoration of "skins," or membranes, is generally conclusive, but the physician should satisfy himself personally of their nature.

The author's remarks upon hydatid disease of the lung are based upon the study of 264 cases, 27 of which have come under his own personal observation.

Materia Medica and Therapeutics: an Introduction to the Rational Treatment of Disease. By J. MITCHELL BRUCE, M.D. London: Cassell & Co. 1884. Pp. 547.

THIS book marks one of the signs of the times, and stands out in strong contrast to what we have been accustomed to in the way of English text-books upon Materia Medica. The tendency of present-day teaching is to make little of materia medica and much of therapeutics, and it cannot be denied that the tendency is, in the main, a good one.

Dr. Bruce aims at nothing less than to furnish the student and practitioner of medicine with a rational guide in the treatment of disease, and he has, undoubtedly, succeeded in producing a readable, useful, and practical volume. He arranges his material under three divisions, viz.:—1. The Inorganic Materia Medica. 2. The Organic Materia Medica. 3. General Therapeutics. The section on General Therapeutics is particularly well done, clearly arranged, and intelligently presented, and the author may justly be congratulated upon having produced an excellent compendium of modern knowledge,

and one that makes good its title as an introduction to the rational treatment of disease.

Where so much is good, we need not carp at some minor errors which met our eye; but it struck us as a curious circumstance that, in Group VI. of the inorganic materia medica, headed "the carbohydrates and other *carbon* compounds," there is *not a single carbohydrate* mentioned in the entire section, which discusses such bodies as alcohol, ether, chloroform, chloral, hydrocyanic acid, carbolic acid, &c., and even nitrous oxide (!).

Some confusion appears as to the constituents of belladonna. We are told, at p. 299, that belladonna root and leaves contain two alkaloids—(1) *atropia*, and (2) *belladonnin*, *homologous* with atropia, and *identical* with hyoscyamia, daturia, and duboisia; and, at p. 306, we are informed that daturia is identical with hyoscyamia and *isomeric*, but not identical, with atropia. These statements are scarcely compatible with each other. At p. 326, in giving the composition of croton oil, what student would recognise valerianic acid under the name of *baldriac* acid. Surely, Dr. Bruce knows that "Baldriansäure" is merely the German for valerianic acid. At p. 185 it is stated that preparations of opium are incompatible with vegetable astringents owing to precipitation of tannates of *morphia* and codeia. This is a common error, whereas the fact is that morphia is one of the few alkaloids which does *not* form an insoluble tannate.

Taking it all in all, it is a trustworthy book to place in the hands of a student, and represents a distinct advance in the method of imparting instruction in therapeutics.

Aneurysms of the Aorta, with especial reference to their Position, Direction, and Effects: being an Exercise for an Act for the Degree of M.B. in the University of Cambridge. By Oswald Browne, M.A., M.B., of Trinity College, lately House Physician at St. Bartholomew's Hospital.

This "exercise" analyses careful *post mortem* records of 88 unpublished cases of aneurysm of the aorta, observed in St. Bartholomew's Hospital during the last seventeen years. Of the 88 cases, 74 occurred in males, 14 only in females. There occurred 31 aneurysms of the ascending portion; of the transverse portion, 29; of the third part of the arch, 10; of the thoracic aorta, 8; and of the abdominal aorta, 9. (We make these numbers tot up 87.) Sixty of the cases occurred in the ascending or transverse portions of the arch, these

being the parts of the aorta most commonly and earliest affected by disease, and first called upon to bear the strain of any increase of blood-pressure. It is stated that in 10 only out of these 60 cases had incompetence of the aortic valves occurred. All the cases (9) of aneurysm of the abdominal aorta occurred in males averaging thirty-nine years of age. Of the 9 cases, 8 terminated by rupture—five times into the retro-peritoneal connective tissues.

This "exercise" is an interesting contribution to the statistics of aortic aneurysm.

Handbook of Geographical and Historical Pathology. By DR. AUGUST HIRSCH. Translated from the Second German Edition by CHARLES CREIGHTON, M.D. Vols. I. and II. New Sydenham Society. 1883, 1885.

NEARLY thirty years have elapsed since Professor Hirsch conceived a plan for the preparation of a Handbook of Geographical and Historical Pathology, and he can now point, with justifiable pride, to the influence which the publication of his book has had in giving an impulse to the cultivation of this field of medical knowledge, and in promoting the course of ætiological inquiry.

The present edition is a new one, and will comprise three volumes, of which two have been published, and the concluding one may be soon looked for.

The undertaking was one that, to do it justice, involved a gigantic amount of labour, and, in its overwhelming mass of widely-scattered data, would have been scarcely possible, except to German industry and perseverance.

Dr. Hirsch expresses the hope that his work will appeal for a favourable reception, not alone to the learned medical world, but also to those circles of practitioners who are accustomed to judge of the worth of a scientific piece of work according to its immediate usefulness—from the so-called "practical" point of view.

The book is one of that class for which we ought to be grateful, and scarcely requires review, or admits of criticism, except, perhaps, as to some of Dr. Hirsch's own conclusions. It is a deep mine of facts and of information combined, and judiciously arranged by the learned author, and Dr. Creighton has admirably performed his part in presenting it in an attractive English dress. Vol. I. deals with Acute Infective Diseases, and Vol. II. with Chronic Infective, Toxic, Parasitic, Septic, and Constitutional Diseases. The chapters

on Acute Infective Diseases embrace influenza, dengue, sweating sickness and miliary fever, smallpox, measles, scarlet fever, malarial diseases, yellow fever, Asiatic cholera, plague, typhus, relapsing fever and bilious typhoid, typhoid.

The more important topics discussed in Vol. II. are leprosy, syphilis, goitre and cretinism, puerperal fever, scurvy, scrofula, diabetes, and gout.

Dr. Creighton has added to the usefulness of the work by compiling a copious index, which greatly facilitates the reader in referring to the storehouse of knowledge so laboriously garnered by Dr. Hirsch.

RECENT WORKS ON CHROMATOLOGY.

I. *Observations on the Chromatology of Actiniæ.* By C. A. MacMunn, M.A., M.D. From the Proceedings of the Royal Society. No. 235. 1885.

II. *Observations on some of the Colouring Matters of the Bile and Urine, with Special Reference to their Origin; and on an easy Method of procuring Hæmatin from Blood.* By C. A. MacMunn, M.A., M.D. From the *Journal of Physiology.* Vol. VI. 1885.

I. The following are the conclusions of, as far as we can judge from the short abstract, a most extensive and highly-interesting work:—

"1. *Actinia mesembryanthemum* contains a colouring matter which can be changed into hæmochromogen and hæmatoporphyrin. This is present in the other species mentioned above (*Bunodes crassicornis*, *Sagartia dianthus*, *Sagartia viduata*, and *Sagartia troglodytes*), and from its character it is provisionally named *Actinio-hæmatin.*

"2. It is not actiniochrome (a pigment found by Professor Moseley in the tentacles of *Bunodes crassicornis*), as its band occurs nearer the violet than that of actiniochrome. Moreover, both actiniochrome and actinio-hæmatin can be extracted with glycerine, in which the latter is converted into hæmochromogen, but the former remains unchanged. Actiniochrome is generally confined to the tentacles, and is not respiratory; actinio-hæmatin occurs in the ectoderm and endoderm, and is respiratory.

"3. A special colouring matter is found in *Sagartia parasitica*, different from either of the above, and this too exists in different states of oxidation. It is not apparently identical with that obtained by Heider from *Cerianthus membranaceus.*

"4. In the mesoderm and elsewhere in *Actinia mesembryanthemum*, and

other species, a green pigment occurs which alone and in solution gives all the reactions of biliverdin.

"5. *Anthea cereus*, *Bunodes ballii*, and *Sagartia bellis*, yield to solvents a colouring matter resembling chlorofucin, and all the colouring matter, which in them shows this spectrum, is derived from the 'yellow cells,' which are abundantly present in their tentacles and elsewhere. It is not identical with any animal or plant chlorophyll, as is proved by adding re-agents to its alcoholic solution.

"6. When 'yellow cells' are present there appears to be a suppression of those colouring matters which in other species are of respiratory use."

II. In his second paper Dr. MacMunn describes in the first section an easy and rapid method of preparing hæmatin from blood. Defibrinated blood or blood-clot is extracted with rectified spirit, containing pure sulphuric acid in the strength of 1 in 17. The solution is filtered, diluted with equal bulk of water, and agitated in a separating funnel with chloroform. After standing for some time the chloroform is separated off and filtered. It is washed with water to remove acid, again separated off and filtered, and the filtrate evaporated The residue is a dark brown pigment, which dries up into a bluish black powder. This is not pure hæmatin, as shown by its solubility in various media, and by its ready reduction with ammonium sulphide. If the chloroform, however, be not evaporated, but allowed to stand for some time, pure hæmatin separates out in crystals resembling closely those of hæmin. It is insoluble in alcohol, chloroform, ether, water, or weak acids, and its alkaline alcoholic solution is hardly changed by ammonium sulphide.

2. The substance commonly occurring in the bile of sheep and oxen, which gives a three or four-banded spectrum, is not, as has been sometimes stated, biliverdin, but among other reactions gives, when its alcoholic solution is acted on by sodium amalgam, a spectrum almost identical with hæmatoporphyrin. Dr. MacMunn has previously found hæmochromogen in the bile of vertebrate and invertebrate animals; as we have seen above, he has recently discovered in Actinia biliverdin, which is here undoubtedly derived from the respiratory colouring matter which is readily changed into hæmochromogen and hæmatoporphyrin; he has found biliverdin in hydrocele fluid into which blood had been extravasated; and in the same lobule of the liver of a pigeon he has found in one place hæmochromogen, in another biliverdin. He hence concludes that "biliverdin is broken-down and changed hæmatin." He proposes to

call the substance in sheep and ox-gall which gives the banded spectrum *cholohæmatin.*

3. An opportunity occurred to examine the pigments of human bile from a fistula resulting after cholecystotomy. It was found that there was no bilirubrin, some biliverdin, and a chromogen of the latter giving biliverdin on oxidation; also the chromogen of a colouring matter very similar to febrile urobilin and stercobilin. "The occurrence of urobilin in bile is very constant, so much so that it has as much, if not more, right to be enumerated among the biliary constituents as bilirubin or biliverdin."

4. An examination of the colouring matter of the fæces is of considerable interest, for if the pigment is the source of febrile urobilin, then the amount of this in the urine may be taken as a measure of absorption from the intestines. Stercobilin from human fæces differs from normal urobilin, but is almost identical with febrile urobilin. Fæces were extracted by different solvents—alcohol, ether, chloroform, spirit and sulphuric acid, water. In none of the solutions were unchanged bile pigments found, but appearances resembling closely those of febrile urobilin and of the urobilin of bile. Hence it is considered that the conclusions previously drawn—that the urobilin of bile is formed in the intestine—are justified.

5. *The Colouring Matter of the Urine.*—The author points out the error and absurdity of supposing that there is only one pigment in the urine, and shows that both in normal and pathological urine there are several pigments and chromogens, some of which are derived from bile and hæmatin, while others are derivatives of indol, skatol, and other products of fermentative action in the intestine. Postponing the consideration of the latter group, he confines himself to those pigments which are derived from hæmatin, bilirubrin, and biliverdin. Of these he discusses pathological, or as it is often improperly called, febrile urobilin—a substance resembling closely stercobilin—normal urobilin, which he shows is very like, if not identical, with a pigment which may be got by oxidation from hæmatin, and finally, a pigment which he formerly called urohæmatin, but which is more properly called urohæmatoporphyrin, as it resembles hæmatoporphyrin. This pigment is found very constantly in rheumatic fever, and has been found in Addison's disease—in the former case due to increased formation, in the latter to defective elimination.

From the entire consideration of these pigments the author concludes as follows:—

"Putting all the facts obtained together, it would appear that the stercobilin resulting from the putrefactive processes in the intestine, and accompanied by imperfectly changed biliary pigments, is taken up by the branches of the portal vein and carried into the liver, where it is probably again changed by the action of a ferment into a chromogen; a portion of this chromogen gets into the blood and is excreted in the urine as a chromogen. A portion may escape in the condition of biliary urobilin as such, and appear in the urine in a further oxidised condition, or owing to disturbance of circulation in the liver a large portion of unchanged biliary urobilin may appear in the urine. Besides this, the urine under normal conditions may contain a pigment which has no biliary origin, and may be derived entirely from hæmatin; while in certain diseased states a reduction product of hæmatin, having no connexion with bilirubrin or biliverdin, and closely related to hæmatoporphyrin, may appear in the urine, and to a great extent, if not altogether, may replace urobilin."

This most interesting and suggestive paper is illustrated by a plate containing drawings of twelve spectra.

A Text-book of Human Physiology, including Histology and Microscopical Anatomy; with Special Reference to the Requirements of Practical Medicine. By DR. L. LANDOIS. Translated from the fourth German Edition, with additions, by WILLIAM STIRLING, M.D., Sc.D. Vol. II. London: Charles Griffin & Co. 1885. Pp. 670.

IN this, the concluding volume of Professor Stirling's translation of Landois' Physiology, the following subjects are dealt with:—The secretion and chemistry of the urine; the functions of the skin, considered as a secreting and absorbing organ; the physiology of the motor apparatus, including voice and speech; the general physiology of the nerves and electro-physiology; the physiology of the peripheral nerves; the physiology of the nerve-centres; the physiology of the organs of special sense; and the physiology of reproduction and development.

Here, as in the first volume, we find not only an excellent translation, but very extensive additions made by Professor Stirling to the original text. The number of engravings too is greatly increased, 494 in the whole work as against 275 in the original. The eminently practical character of the early chapters is well maintained throughout the work, and the constant references to disturbed func-

tions, and the explanation of these by the facts of normal physiology, truly make the book, as stated in the preface, a bridge between physiology and practice of medicine. It is this peculiarity which distinguishes it and gives it its chief value. We hope it will be the means of making our students, and perhaps some of their teachers, understand that a knowledge of physiology is not only an ornamental acquisition whose place is the laboratory and lecture-room, and which may be left behind when we enter the hospital wards, but that it is only by a sound knowledge of the normal functions of all the parts of our body that we can gain an insight into the disturbances of these functions which constitute disease, and learn how far these disturbances may be prevented and controlled.

While we congratulate Professor Stirling on the successful completion of what must have been a really arduous undertaking, we would most cordially recommend his translation to our readers as containing not only what is to be found in ordinary physiological text-books, but much more, which will make it interesting and useful to the practical man. We can scarcely doubt that the work will enjoy in this country a popularity equal to that which it has so worthily achieved in Germany.

Suicide: a Social Science Treatise. By W. Wynn Westcott, M.B. London: H. K. Lewis. 1885. Pp. 191.

This is a rather ghastly subject, and is most ably treated by one coroner and dedicated to another. A vast number of interesting cases of suicide from various causes are given, and an effort is made to draw general conclusions as to the nationality, circumstances, and causes of these unfortunates who shuffle off this mortal coil. The work is curious and interesting, and we hope that the author will continue his researches They will throw light upon a department of sociology which has not been sufficiently attended to.

The Students' Guide to Medical Jurisprudence. By John Abercrombie, M.D. London: J. & A. Churchill. 1885. Small 8vo. Pp. 387.

This work does not pretend to any originality or to the rank of a systematic treatise, but carries out effectually and well the object announced in the preface—viz., the production of a manual which will satisfy the needs of the student and the working practitioner.

The arrangement is clear and lucid; nothing is slurred over; and we did not observe any subject which was not fairly and sufficiently treated. The arrangement of the book hardly requires an index, but a good and full one is supplied. Elaborate organic processes are most properly omitted, inasmuch as when they are required they are invariably most properly committed to the expert specialist. The rules of evidence, and what may be said (and what may not be said) in the witness-box, are fully laid down, and this is the more important, as otherwise well-informed physicians frequently make an unfavourable impression in court from want of attention to these particulars. We strongly recommend this work to those classes of our readers for whom it is written.

Pathological Mycology: an Inquiry into the Ætiology of Infective Diseases. By G. SIMS WOODHEAD, M.D., F.R.C.P. Ed., and ARTHUR W. HARE, M.B., C.M. Section I—Methods. Edinburgh: Young J. Pentland. 1885. Pp. 174.

THERE are few branches of science which in recent times have excited more interest and yielded more valuable results than the study of pathogenetic micro-organisms. It is, however, a study which bristles with difficulties and abounds in sources of error, and too many of the published works show that their authors possessed neither the skill nor the knowledge necessary for the successful prosecution of such investigations. Hitherto the directions for the carrying out of this kind of work have been very difficult of access, as they were not to be had in a collected form, but existed scattered through many works in different languages. The necessity for a short and handy guide, particularly for the use of those who were commencing unaided the study of bacteriology, has been for some time evident, and has given rise to the appearance of two excellent works—one by Dr. Hueppe, of Wiesbaden, entitled "Die Methoden der Bakterien-Forschung;" the other, the volume of Dr. Woodhead and Mr. Hare.

The latter, which we have alone here to notice, consists of five chapters and two appendices. The first chapter treats of the general aspects and true position of the subject, of the relations of micro-organisms to the tissues, the means by which germs find an entrance into the body, the effects which they produce, and of other general matters connected with micro-organisms as causes of disease.

In the second chapter we find a very full and accurate description

of the methods employed in the microscopic examination of micro-organisms and of tissues suspected to contain them. These methods differ very materially from those which are practised in ordinary histological work.

The third chapter contains directions for the pure cultivation of micro-organisms in solid media, such as potato, bread paste, nutrient jelly, agar-agar, blood-serum, &c., &c. The details of the various processes are described with great minuteness, and the different steps, as well as the numerous instruments and pieces of apparatus required, are illustrated by admirably executed drawings. The authors rely greatly on the efficacy of the carbolic spray in preventing contamination from the air during the transference of nutrient material from one vessel to another. In this they differ from Klein, who rejects the spray as inconvenient and useless.

The fourth chapter describes the methods of cultivation in fluid media; and the concluding chapter tells us how micro-organisms may be separated from living or dead tissues for the purpose of starting pure cultures.

The first appendix describes the appearances presented by many micro-organisms, both when examined by the microscope and when seen by the naked eye in pure cultivations on different media.

The second appendix consists of a classified bibliography, and will be found extremely useful by all those who are engaged in bacteriological study.

The volume is illustrated by sixty engravings, many of which are coloured, and which are all of rare beauty and finish.

The work is uniform with Dr. Woodhead's manual of "Practical Pathology," and, like it, in its bringing out reflects the highest credit on the publishers. On the whole, we feel that it supplies a real want, and we commend it most cordially to our readers.

The Essentials of Histology, Descriptive and Practical, for the Use of Students. By E. A. Schäfer, F.R.S. London: Longmans, Green, & Co. 1885. Pp. 245.

The chief feature of this book is the engravings, of which it contains 281. These are, with few exceptions, taken from the second volume of "Quain's Anatomy," but their beauty and usefulness justify the re-publishing of them in a cheap and portable form. The letterpress consists of a condensed description of the tissues and organs. At the commencement of each chapter directions are

given for the preparation of the parts of which the chapter treats, and some further general directions are given in a brief appendix. All these are, we think, too short to be of much use to students, and some of them are not much to be commended. Thus, we think it is not well that objects hardened in picric acid should be washed for hours in water; and pieces of intestines intended to show the absorption of fat will have most of this substance dissolved out of them if they are put through the processes necessary for embedding in paraffin and mounting in balsam.

Still, as is to be expected from any work of Professor Schäfer, this volume will be found useful, and will, no doubt, enjoy a large popularity among students, to whom its numerous illustrations will commend it.

Eczema and its Management. By Dr. L. DUNCAN BULKLEY. 2nd edition. New York: Putnam's Sons. London: Churchill.

MEDICAL literature is not wanting in monographs on eczema, and we may, in particular, refer to Dr. M'Call Anderson's treatise on Eczema as an excellent example of specialisation in writing.

Dr. Bulkley is a dermatologist of large practical experience, and wields the pen of a ready writer. The result of his latest labours is a work of substantial size—nearly 350 pages—two-thirds of which are devoted to the treatment of eczema. Here we see the weak and the strong points of the author. Although educated in the Vienna school, and duly impressed with its teaching as to local management of cutaneous diseases, yet he has felt constrained to urge to the utmost the importance of constitutional treatment, and he lays great stress upon the use of medicinal, dietetic, and hygienic means.

Many useful practical observations are to be found in the book, and we must express our own obligations to it for help in the management of some difficult or obstinate cases of eczema. We cannot, however, avoid adding that the directions as to diet and hygiene are overstrained in minuteness of detail, and sometimes border on the ridiculous; and we hope that in the next edition these redundances will be pruned, and the book thereby rendered less diffuse and more useful.

PART III.

HALF-YEARLY REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.

By Ringrose Atkins, M.A., M.D.; Resident Medical Superintendent, District Lunatic Asylum, Waterford.

[*Concluded from page 154.*]

III. NEURO-PATHOLOGY AND PATHOLOGICAL ANATOMY.

Parant on Paralysis Agitans as a Cause of Insanity.—In a past number of the *Annales Méd. Psychol.*, Dr. Parant relates the details of an interesting case of paralysis agitans, in which various manifestations of insanity appeared, and gives a *résumé* of what has been said by the chief French writers on this subject, by whom but little notice of the mental side of the disorder is taken; those who mention it at all merely drawing attention to the dementia or general weakening of the mental faculties, commonly supervening in the later stages. Prof. Ball, however, has frequently seen mental disturbances in these patients, not only irritability and general mental weakness, but also true insanity, with hallucinations and delusions; the insanity, in his opinion, generally assuming the form of melancholia, with delusions of persecution. Prof. Ball and Dr. Parant both notice that when the tremor becomes less marked, the mental troubles also tend to disappear.

Dr. Parant compares paralysis agitans with miliary sclerosis and locomotor ataxy. He says, quoting Charcot, that in the cerebro-spinal form of miliary sclerosis, we generally, towards the end of the disease, find that the mental faculties become weakened, but that, in some cases, the classical forms of insanity present themselves. The sufferers from locomotor ataxy also, occasionally, become insane, the characteristic form here being melancholia, with delusions of persecution and various hallucinations depending upon lesions of the optic, auditory, or other sensory nerves. The insanity in locomotor ataxy and miliary sclerosis is due to the extension of the morbid

process from the cord to the brain; and Dr. Parant is of opinion that this is also the case in paralysis agitans. The author thus formulates his conclusions:—

"1. That true insanity is occasionally met with in persons suffering from paralysis agitans; that it may present itself in various forms, but that mental depression is the predominant feature.

"2. That this insanity is probably due to the extension of the lesions of the cord to the brain, or to the formation in the brain of isolated patches of disease, springing from the same cause as the chief disorder in the cord.

"Some time since I recorded the case of a man who, under the influence of shock, became affected with paralysis, and in whom true insanity—melancholia, with organic delusions and hallucinations of persecutions, supervened, persisting until death. It seems to me that grief at becoming affected with such a wearying and permanent malady, and possibly the implication of the sympathetic system, is sufficient to account for a deep degree of mental depression, as well as for the eventual organic delusions which may occur. I have had recently under my care a case of locomotor ataxy, of many years' standing, where true insanity—melancholia, delusions, and finally dementia, occurred, persisting until death, though not to any great degree hastening the termination."—*Brain*, Oct., 1884.

Zacher on General Paralysis.—Zacher (*Archiv. f. Psych.*, Bd. XIV., p. 463) continues his paper on some peculiar forms of general paralysis (for abstract of first part of which, see *Brain*, Vol. V., p. 566).

1. *On the Tendon and Skin Reflexes during and after Paralytic Attacks.*—The author made observations on general paralytics with healthy spinal cords, with fascicular sclerosis of the lateral columns, and with combined disease of the posterior and lateral columns respectively; and he comes to the conclusion that the tendon reflexes, during and after paralytic attacks, are increased on the side which presents convulsive symptoms, even though a degree of paresis co-exists, but are diminished or even abolished on the side which presents simply flaccid paralysis. If the tendon reflexes were increased before the attack, they will either be still further increased or diminished according to the above rule. If they were absent before the attack they will not be re-established. A similar relation exists between the superficial reflexes and the condition of sensibility. Zacher accepts Schwartz's theory as to the correspondence between brain and spinal centres.

2. *On certain Motor Phenomena during and after Paralytic Attacks.*—Muscular tension, rigidity, and contracture are often observed, and they probably express merely a different degree of the motor irritability that gives rise to convulsive phenomena. They are not to be looked on as evidence of spinal lesion, since they may be present where the cord is sound; they are probably produced by the excitation of the cerebral cortex. Another motor phenomenon observed during these paralytic attacks is that of automatic purposed co-ordinated movements that have all the appearance of being directed by the will. Similar movements are familiar to us in some epileptic conditions, and have been described by Fürstner, in pachymeningitis. The presence of paræsthesia and ill-defined sense impressions may account for the movements, or, on the other hand, they may simply be the result of a primary excitation of a motor area. Another of the motor phenomena, alluded to by Zacher, is the conjugate deviation of the head and eyes which follows the laws laid down by Prevost and Landouzy. And, lastly, he draws attention to the ocurrence of disturbance of the muscular sense, evidenced by the patient's want of knowledge of the position of his limbs.

3. *On Visual Disturbances during and after Paralytic Attacks.*—These may be divided into two classes. First, cases of pure mental blindness (*Seelenblindheit*). In the few cases Zacher has observed the blindness was bilateral, though the motor symptoms were only on the right side. Secondly, cases of bilateral visual affection, which are probably examples of true hemianopsia. and are due to lesion of the posterior cerebral lobes. To these should be added, perhaps, a third class, including cases presenting a combination of these various visual disturbances, such as Fürstner and others have described. The existence of unilateral amaurosis of cerebral origin must still be regarded as unproved.

4. *On some Peculiar Vaso-motor Disturbances.*—If a blunt object, such as a key, was drawn across the skin, a pale streak was seen, which soon became intensely red, and close to it appeared little raised square patches, which soon coalesced and formed a strip, slightly raised above the general surface. This is probably an exaggerated example of the phenomenon to which Trousseau drew attention, and which is exquisitely seen in some epileptic conditions.—*Brain.*

On Mental Overwork and Premature Disease among Public and Professional Men.—This is the subject of the "Toner Lecture," delivered last year, by Dr. C. K. Kills, which has been published

by the Smithsonian Institution, Washington, U.S.A. The longevity of intellectual workers in general is first considered, and is found to be above that of most other classes. The inferences and conclusions drawn by the author are largely based upon a study of sixty cases, especially collected by the author—cases in which loss of health or life has been mainly attributable to excessive brain work and brain strain. These cases are arranged:—(1) Men in political and official life, including cabinet officers, senators, representatives, department officials, governors and candidates for office; (2) professional men, including physicians, lawyers, clergymen, journalists, scientists, and teachers.

The actual occupations were:—Cabinet officer, 1; senators, 8; representatives in Congress, 10; department officials, 5; governors, 2; candidates for important offices, 2; physicians, 6; lawyers, 7; clergymen, 2; journalists, 4; scientists, 6; teachers, 7.

Twenty-eight of the sixty, therefore, were men in political and official life, and eighteen of these were members of Congress. The average longevity of men in the higher walks of political life, in America, is regarded as considerably below the average of those who occupy similar positions in England. Comparing, so far as information was available, the ages, at death, of United States Congressmen and members of the English Parliament, who have died since 1860, the following results were obtained:—Fifty-nine United States senators gave an average of 61 years; 146 United States representatives an average of 55 years; the average of both being, therefore, 58 years. One hundred and twenty-one members of Parliament gave the remarkable average, at death, of 68 years.

Taking twenty-five of those who might be regarded as the most eminent American statesmen of the last one hundred years, and comparing their ages at death with those of the most distinguished English statesmen, the United States gave an average of sixty-nine years and Great Britain of seventy—no practical difference. It was noticeable, however, that much of the best work of the great English statesmen—of Palmerston, Derby, and Beaconsfield, for instance—had been done at an advanced age, when most American public men have ceased to do anything important. The lecturer considers some of the causes which lead to mental overwork and breakdown in American public and professional life, the early warnings of such overwork and the forms of disease most likely to result.

The preparations, qualifications, and modes of life of American public men are discussed, and in some instances comparisons are

made with English statesmen. The histories of many of the cases are briefly sketched. The special conditions which lead to overwork and its consequences among physicians, lawyers, journalists, scientists, and teachers are presented at some length, with illustrative cases. The evil effects of competitive examinations and cramming upon both teachers and scholars in our public schools are also described.

The symptom-groups and diseases represented by the series of sixty cases, are summarised as follows:—Acute neurasthenia, 18; insanity, 10; phthisis, 9; diabetes, 4; cerebral hæmorrhage, 4; Bright's disease, 3; posterior spinal sclerosis, 3; pneumonia, 3; bulbar paralysis, 1; angina pectoris, 1; erysipelas, 1; hepatitis, 1; enteritis, 1; glossitis, 1.

It was found almost impossible to present in orderly array all the symptoms which may be regarded as the indications of nervous exhaustion, and the probable precursors of premature disease from brain-strain and overwork, these symptoms varying somewhat with the individual—with his hereditary tendencies, habits, and surroundings. There were, however, certain common and positive evidences of existing or coming evil which were present in many cases.

The most important conclusions are summarised as follows:—

1. Intellectual work does not of itself injure health, or shorten life, but mental overwork, particularly when associated with emotional strain, is a frequent cause of nervous breakdown and premature disease.

2. The average longevity of public men in America is less than in England. Politics here are not, as there, in the best sense a vocation; and American public men succumb in health, or fail to attain long life, because they go into careers unprepared by inheritance, education, and training for the severe demands to be made upon their powers.

3. Health and life are sometimes lost through forgetfulness of the fact that mental strain and overwork are particularly dangerous to those in middle life, or advanced in years, who attempt brain-work and responsibilities to which they have not been accustomed. The effects of suddenly-imposed mental strain upon these classes are especially disastrous.

4. If not subjected to unusual mental or physical strain, public and professional men, as well as those in other walks in life, although afflicted with organic diseases, may live in comparative comfort, and be able to do a moderate amount of work for many years.

5. Among special causes of premature disease in public life are

onerous and perplexing duties on Congressional committees, the uncertainties and disappointments attendant upon public positions, the great strain to which candidates are subjected during political campaigns, lack of recreation, and social excesses and abuses at the national capital.

6. Among physicians, lawyers, and journalists, the performance of brain-work under pressure for time, and under bad hygienic conditions, is a common cause of ill-health. Defective education and pecuniary embarrassments are also special causes of nervous breakdown and premature disease among physicians and lawyers.

7. Comparatively few clergymen succumb to mental overwork, although many suffer from a mild but annoying form of neurasthenia.

8. The danger to the scientific worker usually arises from too intense and too prolonged activity of the mind in one direction.

9. The system of severe competitive examinations in vogue in many communities, saps the health of both teachers and pupils. In American schools generally educational methods are bad, recreation is too much neglected, and unhealthy emulation too much encouraged. Education is not properly individualised.

10. Chronic neurasthenia is not common among men prominent in public affairs and in the professions. Such men are, however, sometimes the victims of a severe, acute nervous prostration, which may result in serious organic disease.

11. Nervous strain is one of the causes of lithæmia, which is not of infrequent occurrence among public and professional men, but lithæmia and neurasthenia are not interchangeable terms.

12. The warnings of mental overwork and overstrain vary with individuals and circumstances, but certain psychical symptoms and such physical symptoms as immobility of countenance, diminished resisting power, heart-failure, sleeplessness, cervico-occipital pain or distress, and dyspepsia, are of most frequent occurrence.

Insanity, particularly in the forms of melancholia and paretic dementia, is sometimes developed by brain-strain and overwork. A family history of insanity is often present in such cases.

14. Phthisis, diabetes, and Bright's disease are among other diseases most likely to be developed by mental overwork. Men in whose families phthisis is hereditary, should carefully guard against such overwork.

15. Overtaxing the mind and nervous system may be the exciting cause of almost any serious disorder to which chance, accident, imprudence, or infection exposes the individual.

16. Many diseases not nervous in their seat or manifestation, are developed directly or indirectly as the result of mental and nervous strain, through exhaustion, impairment, or lesion of the centres of the organic functions.

On the Combination of Lateral and Posterior Sclerosis in the Spinal Cord.—In the April (1885) number of *Brain*, Dr. Ormerod contributes an interesting critical digest on the above subject, which has recently been occupying attention amongst Continental pathologists. After pointing out the now well-known distinctions between "systematic" and "diffuse" degenerative lesions of the cord, the author proceeds to record the abstracts of 20 cases where the spinal lesion affected both the lateral and posterior columns. These cases it would be impossible, for want of space, to recapitulate. The contribution closes with a commentary which, as it embraces a review of the subject, is extracted *in extenso*. "The cases recorded," the author remarks, "are susceptible of some classification, and may be subdivided according to the nature of the sclerosis in the different parts of the cord. Thus, both posterior and lateral sclerosis may be systematic, or the one may be systematic, the other diffuse, or of doubtful nature." (Interesting cases of sclerosis, undoubtedly diffuse, have been recorded, but are not included in this contribution). In some cases, at any rate, the sclerosis of both columns appears to have been primarily systematic and mutually independent. Kabler and Picks' first case (No. 3) is mentioned by Dejernie as the only example of this, but he appears to have overlooked Strumpell's cases (Nos. 13, 14, 15). These, with possibly some others (Nos. 7 [?], 10, 17), suffice to prove the existence as well as the mere possibility of multiple tract disease.

It is noticeable that in some of these (Nos. 13, 14), the lateral sclerosis was more intense than the posterior, and more strictly confined to known tracts, though usually the reverse seems to hold. The posterior sclerosis was in these two cases so symmetrical and regular as to convince the author it could not be diffuse, yet it deviated from known tracts just so far as to suggest either that our knowledge of the developmental tracts in this region is as yet incomplete, or that tracts of disease may differ from the tracts of development. Usually, however, the condition appears to have been this—posterior sclerosis, presumably primary and systematic, with lateral sclerosis, either diffuse or of doubtful nature. The view taken by Dejernie of his two cases, and he is inclined to extend it to the whole class of cases under consideration, is this—they begin as

ordinary tabes—*i.e.*, systematic sclerosis of the posterior columns; in connection with this arises a meningitis, which spreads round to the lateral columns, and there sets up a sclerosis which is diffuse (*i.e.*, limited to no particular tract), and spreads from the periphery inwards. But it appears that Westphal has already considered this hypothesis, and thought it inadequate; for such meningeal affection as there was did not correspond in position and intensity to the lateral sclerosis. He considered the latter to be primary, though not corresponding to known developmental tracts. We must be content therefore to say that the nature of the lateral sclerosis is in some cases doubtful. We may remark, however, with reference to peripheral sclerosis, that it may be sometimes difficult to say whether this has spread from the meninges, or is a systematic affection of the cerebellar tracts. Perhaps the integrity or the reverse of the cells of Clarke's columns may help to determine this, as these cells are held by good authorities to be the trophic centres for the cerebellar tracts. The histology of the lesion does not appear as yet to have contributed much towards settling their nature. Westphal, in some of his cases, notices a difference in the histological character of the disease in the two parts of the cord. In the posterior columns there was gray degeneration, or sclerosis characterised by overgrowth of fibrillar interstitial tissue, and disappearance of nerve elements; in the lateral columns a degeneration characterised by the presence of numerous granular cells. But these are, in his view, only different stages of the same process. Other authors—*e.g.*, Rabesin, mention that the minute lesions resembled those of insular sclerosis—*i.e.*, increase of neuroglia nuclei, presence of amyloid bodies, hypertrophy of axis cylinders, &c. But Dejernie roundly declares that upon none of these things can we base a classification, but that the only reliable distinction between degeneration beginning in the nerve-fibres, and that beginning in the interstitial tissue, is to be found in their distribution—the former is systematic, the latter diffuse.

Indeed, it cannot be a matter of surprise that we know so little of the causes and of the histological beginnings of complex sclerosis, considering that our knowledge of the simple forms is very limited. We may begin, indeed, with something definite in the shape of "Wallerian degeneration," the degeneration which the fibres of a peripheral nerve undergo when separated from their nutritive centre. Comparable, if not identical, to this is the process of secondary degeneration in the motor tracts of the cord when separated from their cerebral centres. But the nature of primary degenerations is a

matter of less certainty. Take the commonest of them—ordinary tabes dorsalis. Concerning this disease, the commonly-accepted view is that since it originates and spreads in a district which is defined by nervous function rather than by anatomical characteristics, it must originate in the nerve fibres. Yet Dr. Buzzard has recently published a case (*Brain*, No. 24) in which though the symptoms during life, confirmed by the appearances after death, pointed conclusively to tabes dorsalis, yet there was good reason to think the disease originated in the neighbourhood of the blood-vessels. This is a confirmation of the views promulgated by Adam Kiewitch at the International Congress, 1881, that tabes is an interstitial degeneration following the distribution of the blood-vessels in the posterior columns. But Adam Kiewitch himself admits that this theory will not cover all cases, for he says, in a later publication: "There are two kinds of tabes—the one an interstitial degeneration, originating in the overgrowth of the connective tissue which accompanies the arteries traversing the posterior columns; the other originating from the nerves, and therefore parenchymatous in its nature." Let us admit, however, what is usually believed—that, as a rule, systematic sclerosis originates in the nerve fibres, and is, therefore, parenchymatous or "peritubular." We have got to explain why particular tracts of fibres should be picked out by disease. This question is not yet removed from the field of conjecture. Shall we say that the tracts which in the course of development are latest to be completed are the first to feel the effects of dissolution? or shall we suppose that certain noxious agents, such, for instance, as syphilis, can centre themselves upon definite nerve districts in the same way as the poisons of ergot and lathyrus appear to do?

With reference to the symptoms and diagnosis we will endeavour to summarise the various hints which have been thrown out by the authors quoted. Broadly speaking, it may be said that the symptoms due to lesion of either column manifest themselves so far as they are not neutralised by lesion of the other column. Assuming, for instance, the existence of a complete posterior sclerosis, we may recognise an additional lateral sclerosis (according to Westphal) by addition of motor paresis to the symptoms of ataxia. In some such cases the paresis grows up side by side with the ataxia, modifying the ataxic gait from the beginning of the case. In others, according to Dejernie, the paralytic symptoms do not appear until quite a late period of the disease. But as to the other symptoms which usually accompany lateral sclerosis, viz., rigidity of the legs, exaggeration of

tendon reflex, ankle clonus, &c., these, in the presence of well-marked posterior sclerosis affecting the lumbar region, do not make their appearance, but the tendon reflex remains absent, as in simple posterior sclerosis. In other cases, however, the lateral sclerosis and its symptoms predominate. This is particularly the case when the posterior sclerosis (as sometimes happens) is imperfectly developed in the lumbar region. Paraplegia, with rigidity, then constitutes the leading feature. If the paraplegia be complete, of course no ataxia of the lower limbs can be made out. In such cases the posterior sclerosis may manifest itself either by ataxia of the upper limbs or by sensory symptoms, such as lightning pains, anæsthesia, or the like, or by troubles of micturition, like those observed in ordinary tabes, or even by optic atrophy. It deserves notice that sometimes the symptoms of spastic paraplegia have been accompanied by such muscular wasting as to give the case the appearance of amyotrophic lateral sclerosis. It does not appear, however, that any reaction of degeneration has been observed. On the whole, it seems that the elements for diagnosis of combined lateral and posterior sclerosis, and, in fact, the diagnosis has been more than once made.

Hypertonia Musculorum Pseudo-hypertrophica.—Under this title Eulenberg reports a curious case somewhat resembling Thomson's disease, but presenting certain anomalies. The chief symptoms were rigidity of the muscles, difficulty in voluntary motion, and increased volume in the muscles affected. The patient, a male, twenty-seven years, had no hereditary predisposition to nervous disease, and was well until his twentieth year. At that time there generally developed a difficulty in standing and walking, retention of urine, and vesical tenesmus, as well as occasional incontinence, and a certain stiffness in the use of the arms. At the same time an indifferent and melancholy disposition came, without apparent cause, over the patient, producing a decided change in his character. This condition has persisted, and when he was examined by Eulenberg he presented the following symptoms:—The gait of the patient is peculiar; he shuffles along, never raising his heel from the ground, never fully extending his legs, but keeping his knees bent. He cannot step up upon a stool, and sitting down or rising is a difficult matter, especially the latter, which is possible only by the aid of his hands. The reason for this is a marked rigidity of the quadriceps femoris and muscles of the calves of the legs. These muscles stand out like those of an athlete, although the body of the patient is thin. The rigidity, which is accompanied by a hardness of the

muscles, is not due, however, to their active contraction. When the patient stands for some time in one position the rigidity gradually passes away, but returns as soon as any active or passive movement is made. The muscles on the outer side of the hip presented a similar condition, but the adductors, flexors, and glutei escaped. When the patient was seated, motions could only be made with great difficulty and slowly in the affected muscles. It was then evident that the extensors of the foot and tibialis anticus were also involved. The mechanical contractility was not increased but rather diminished. The patellar tendon reflex was absent on both sides. The skin reflexes were normal. Plantar reflex present. Foot clonus absent. Paradoxical contraction (contraction of the tibialis anticus with prominence of its tendon after passive dorsal flexion of the foot) was present. The deltoid triceps and extensors of the forearm were the muscles affected in the arms, and the same slow action, prominence, and rigidity, with hardness, were noticed. The other muscles presented no changes. Speech was slow but undisturbed; patient could not whistle. The tongue was thick and tremor was present. No affection of the eyes; pupil reflexes normal. No disturbances of sensation. Marked diminution in the reaction of the affected muscles to both faradic and galvanic electricity through both nerve and muscle, without any evidence of reaction of degeneration. Eulenberg considers that the symptoms indicate a severe central disease of the cord of unknown origin and location, and reports the case as one of a hitherto unnoticed affection (*Neurol. Centralblatt*, N. 17, 1884, abstracted in *Am. Jour. of Neurol. and Psychiatry*, April, 1885). This issue of the journal brings its career to a close, as the editors, in a valedictory article, inform us that, though largely supported, the undertaking by them of a new enterprise compels them to discontinue its publication. Had the journal been continued, they remark that its design should have been materially modified, as, in their opinion, the "day for quarterlies seems to be passed," as had been said on a former occasion when the publication of the *British and Foreign Med. Chir. Rev.* was discontinued.

Greiff on the Localisation of Hemichorea.—Two cases are reported (*Archiv. f. Psych.*, Bd. XIV., p. 598). The first was a case of left hemichorea following left hemiplegia, and the autopsy revealed lesions in the left cerebellar hemisphere, the right occipital lobe (implicating the occipito-temporal, lingual, and inferior temporal convolutions), and the right optic thalamus. In the optic thalamus there were two small hæmorrhagic foci—one in its upper and inner

portion; the other at its lower border, where it is contiguous with the pes pedunculi, into which the focus could be traced. Greiff concludes that it was this last lesion that caused the hemichorea by the excitation it produced on the pyramidal fibres of the peduncle. The second was the case of a man, aged fifty-one, who presented, in the early part of his illness, the symptoms of senile dementia, but afterwards epileptiform attacks developed, so that the case may be referred to the group of progressive paralysis (general paralysis). After one of the convulsive attacks, in which the left side had, as usual, been most affected, left hemichorea appeared and lasted four days, when it declined into a hemiathetosis and passed away. Microscopic examination showed, in an extreme degree, changes in and around the vessels, with pathological alterations of the nerve cells. These changes were most marked in the right central convolutions and the paracentral lobule. There was also a small focus of incipient softening in the upper part of the right pons adjacent to the pyramidal strands, with descending degeneration of these strands. It is impossible to decide which of these lesions determined the hemichorea; but in either case it was probably by irritation of the pyramidal fibres.—(*Brain.*)

IV. NEURO-THERAPEUTICS.

Langreuter on Paraldehyde and Acetal in Mental Diseases.—The author (*Archiv. f. Psych., Bd.* XV., p. 1) recommends paraldehyde as a hypnotic in mental diseases. It is of most service in cases of epileptic excitement, with feelings of terror, &c., and in the similar conditions of disturbed consciousness that occur in general paralysis. The superiority of the drug over chloral lies in its more rapid action and greater safety. The dose is from five to six grammes (75 to 90 minims) and a sleep is produced in from five to ten minutes, that lasts about two hours, and often, especially at night, seven or eight hours. Acetal is similar in in its action to paraldehyde, but it is not so reliable, and its smell and taste are much more disagreeable.—(*Brain.*)

Hypodermic Injections of Amyl followed by Convulsions.—Dr. Sidney Ringer has noticed the occasional action of nitrite of amyl upon the heart, and the strange effect sometimes produced upon the nervous centres. He says—"I have seen one case where a woman immediately after a drop dose turned deadly pale, felt very giddy, and then became partially unconscious, remaining so for ten minutes." And again, "A delicate woman after $\frac{1}{30}$ of a drop went into a trance-

like state." In a case described by Dr. Strahan a chronic maniac, aged fifty-three, had suffered for several days from severe lumbago; a ten minim dose of a ten per cent. solution of nitrite of amyl in rectified spirits was injected hypodermically. Immediately after the injection the pain disappeared. He got up from the bed, and, at my request, stooped and touched the floor with his fingers. In as nearly as could be guessed, about a minute and a half, he suddenly became deadly pale, and sank upon the bed. Then his head (bald), face, and neck became congested, and he was strongly convulsed for about half a minute. The convulsions affected the face and arms strongly, the legs slightly. The teeth were ground, and the breathing was suspended. In a few minutes after coming out of this fit he was attacked by a second one, during which the heart's action became very faint. He was made to inhale some chloroform, and the fits did not return. The lumbago entirely disappeared. This observation is interesting, as inhalations of nitrite of amyl have been recommended to check, both in this country and in Italy, the occurrence of epileptic convulsions. Weir Mitchell first recommended nitrite of amyl in epilepsy after successfully controlling by it an obstinate case of continuous convulsions, which resisted everything else. [A case where amyl given by inhalation was followed by severe convulsions was recorded by me in last report, Dec., 1884.—*Rep.*]

The Therapeutic Effects of Hypnotism.—In the *Neurol. Centralblatt*, 1885, No. 3, is given an abstract of Prof. de Giovanni's observations. Dr. Giovanni obtained favourable results in cases of obstinate contractures, long-standing neuralgias, nervous sleeplessness, accompanied with vomiting, and all kinds of convulsions. Attention is called to the danger from the careless use of hypnotism, which in some cases was followed by convulsions. One patient who was cured by this means of hysterical contractures of the legs, &c., used to put herself to sleep on the slightest provocation, and, consequently, it was thought, suffered from periodical convulsions. Even when the sleep is not deep, Dr. Giovanni obtained good therapeutic effects. The physiological effects noted are not particularly new. In one case pressure on one ovary caused the head to be turned to the opposite side, while when pressure was made on both ovaries the head was raised from the pillow. In the discussion which followed the reading of the paper, Prof. Tamburini related two cases of hystero-epilepsy in which the attacks ceased after hypnotising the patients, while in a third case the attacks came on after hypnotism.

Prof. Morselli has hypnotised twenty persons, and has not seen any ill effects follow, but has been able to effect cures—as, for example, in hiccough.

Cannabin Tannate as an Hypnotic (*Berlin. klin. Wochen.*, 1884, No. 7).—Pusinelli was led by Feonmuller's recommendations of this drug as a hypnotic to make extended experiments to test its value. Feonmuller gave it in doses of 0·1 to 1·5 grammes, and in only twelve cases out of sixty-four was any effect produced. Merk states that in the formation of the tannate an intensely poisonous substance, an ethereal oil, is separated out. This oil, if injected subcutaneously, produces dangerous symptoms of poisoning, local and extensive abscesses, with high fever. Indian hemp also contains this oil, but cannabin tannate is free from it—a fact which explains the mild effect of the latter and the absence of poisonous symptoms. Pusinelli gave the drug sixty-three times in doses varying from 0·1 to 1·5 grammes. The cases embraced various forms of disease. His results on the whole were good. He concludes as follows:—It is a mild hypnotic, which deserves a place in the list of such drugs. Properly used it is prompt in its action, and unaccompanied by other effects. It cannot always replace other hypnotics, but only when others are without effect from one cause or another. The indications for its employment are:—(1.) in purely nervous habitual and neurasthenic sleeplessness; and (2.) in the sleeplessness occurring in chronic painless diseases with prolonged rest in bed. Cannabin tannate is not an anodyne. The dose depends on age, &c., varying from 0·3 to 1·5 grammes. It is well to begin with 0·5 grammes to 1·0 gramme. The drug loses its effect only after it has been given for weeks. Pusinelli cannot agree with the extravagant praise of Feonmuller, who recommends it in the place of morphia, and in the sleeplessness due to painful affections. [From personal experience of the drug, I have come to the conclusion that it cannot be depended on at all as a hypnotic, its action in the majority of instances being imperceptible.—*Rep.*]

The Cure of Writers' Cramp.—In the *Brit. Med. Journ.*, Feb. 14, 1885, Dr. De Watteville speaks highly of Mr. Julius Wolff's treatment of writers' cramp by massage and gymnastics. Dr. De Watteville having had the usual discouraging failures with all methods of treating this disease, put two well-marked cases under the care of Mr. Wolff, who had come over to England to demonstrate his method, and watched the results. The first case was of "many years'" duration, and the second ten. Both were severe cases. The

operations of stretching, massage, and local gymnastics were repeated twice a day for from twenty-five to forty minutes each time. The first case remained under Mr. Wolff's care four weeks, the latter five weeks. Both were cured. Dr. De Watteville mentions a third case which he sent to M. Wolff after his article was written, and which was still under treatment. "The case, one of the worst he ever saw, was of seventeen years' duration; and yet before a fortnight had elapsed the use of the pen had returned to such a degree as to allow the patient to write for several hours a day, and with almost normal rapidity and firmness. Mr. Wolff's method is roughly as follows:—The massage consists of rubbing, kneading, stretching, and beating of the fingers and the several muscles of the hand and arm with or without the assistance of elastic bands. The gymnastic exercises are active and passive. The latter consists of flexions and extensions of all the joints of the fingers, hand, and arm. Active exercises include systematic voluntary movements of the parts affected, and, if the general condition of the patient requires it, of all the limbs and trunk. As a rule, two sittings daily are required, extending from twenty to forty minutes each on an average, and in addition to this the patient may be required to practise the gymnastic exercises at home. Later on graduated exercises in writing are prescribed.

Beuda on Paraldehyde.—Dr. Thomas Beuda expresses himself favourably as a result of his experience with it in thirty-four cases embracing various forms of insanity. Of these cases sleep was produced with doses not exceeding four grammes, in twenty-four cases, though in seven cases the effect quietly passed off, and it was found necessary to rapidly increase the dose. The effect on the disease itself was very limited, a beneficial effect being obtained in only a few cases, while one or two seemed to be made worse. Disagreeable symptoms were produced in a few cases. The drug is principally eliminated by the lungs. The appetite was in some cases improved, and in two cases diminished. The paraldehyde was subcutaneously injected in no cases. The injections caused pain, and in one case profound collapse, and was consequently abandoned. Beuda concludes that in many cases paraldehyde can be given with good effect; that it has the advantage over morphia and chloral in being far safer, its ill effects being disagreeable rather than dangerous. It has the disadvantage in common with other drugs—that the dose must be constantly increased.—(*Neurol. Centralblatt*, No. 12, 1884; *Am. Journ. Nerv. and Ment. Dis.*)

Previous experiments with paraldehyde have been made mostly in insane hospitals. Van Nooren has used it in a variety of diseases, including emphysema, bronchitis, phthisis, spinal and other nervous diseases, heart disease, pneumonia, articular rheumatism, &c., and ae a result of his observations highly recommends it. He did not notice any ill effects accompanying or following its use. The contra-indications to its employment are severe gastric disease and advanced phthisis, with laryngeal complication. The dose employed varied between three and six grammes. After every dose, usually given at 8 o'clock p.m., the patient fell asleep in from fifteen to forty-five minutes, generally in half an hour. Van Nooren considers there is no danger in giving the drug when the heart is weakened from disease, as it does not affect the pulse rate, or lower the arterial pressure in any appreciable degree.—(*Centralblatt f. klin. Med.*, No. 12, 1884).

Dr. Kurz (Florence) has also reported the results of his experience in twenty-four cases, and gives a favourable opinion of the value of the drug. His cases embraced a variety of diseases (including phthisis,cancer, heart disease, melancholia, &c.), and the sleeplessness, for which the paraldehyde was given, had in most cases already existed some time, and resisted other hypnotics. Of these twenty-four cases slight or no effect was produced in four, and in these four mechanical causes had some influence, while in none was a second trial made. Dr. Kurz concludes that the sleep from paraldehyde is nearest to the natural sleep, and is without after-effects. He gives to paraldehyde the first place amongst narcotics.—(*Centralblatt für klin. Med.*, No. 18, 1884.)

Cervello has found that paraldehyde is antagonistic in its action to strychnia. Animals poisoned with fatal doses of strychnia recover if paraldehyde be given. The latter not only averts death, but also the convulsions. The reverse, however, is not true. Animals poisoned by paraldehyde are not saved by strychnia. The antagonistic action of paraldehyde to strychnia is due to its action on the nervous centres. The former lowers, the latter increases, the reflex excitability of the nervous system.—(*Centralblatt für klin. Med.*, No. 5, 1884.)

Ergotin in General Paralysis.—Girma recommends the methodical use of ergotin for the cerebral congestion occurring in general paralysis. According to Girma, the dilated capillaries are contracted especially in the brain and spinal cord, and consequently the congestion removed, the digestive functions regulated, the constipation

relieved, and the apoplectic and epileptic attacks cease. The drug must be used in the early stages of the disease when the changes in the central organs are not organic, but functional; in the later stages ergotin has still a sedative action.—(*L'Encephale*, 1884, No. 2, p. 160).

Metallotherapy.— Drs. Burg and Moricourt report the following case of a young woman, twenty years old, who had been an epileptic since infancy, and had suffered for fifteen years from ovarian neuralgia, and for eight years from hyperalgesia of the breast. The least touch in these two regions caused most intense pain. The whole remainder of the body, except the outer aspect of the left leg, was absolutely anæsthetic. The special senses were affected in a less degree, and the muscular power was diminished. Bromide, static electricity, and baths were, in turn, used without benefit. Finally, it having been found that the patient was sensitive to silver and aluminum, she was treated internally and externally with the former. Sensation having been restored by means of aluminum placed on the left forearm, the patient was requested to place a plate of silver above the left breast. After some hesitation and considerable trepidation she did so, and found to her astonishment that she could not only bear it, but could press firmly without causing more than slight pain, which in a few moments also disappeared. Similar effects followed the application of silver discs to the ovarian region and below the breast. Ten days later there was a return of the hyperæsthesia, but in different situations. At the end of a week this again disappeared under the same treatment. Five weeks later the patient reported herself free from pain, though the epileptic attacks continued. The writers also relate another case in the service of Dujardin Beaumetz, which, they claim, shows the influence of metallotherapy. A woman, forty-one years old, suffered from impairment of general and special sensibility—paraplegia, hypermetropia, lumbar pain, &c. Having been found sensitive to gold and copper, she was given the former internally by subcutaneous injection, and the latter was applied externally. She greatly improved, though apparently at the time of writing not yet well.—*Gaz. des Hôpitaux.*

Seguin on the American method of giving Potassium Iodide in very large doses.—(*Arch. of Medicine*, 1884, p. 114.) The author alludes more particularly to the later nervous lesions of syphilis. In many cases he admits that ordinary doses (viz., 8 grammes or 120 grs. daily) are sufficient. But it often happens that 10 to 15 grammes a day have to be administered, and this dose

increased week by week before results can be obtained. For instance, in syphilitic headache, Seguin prescribes two doses of 4 grammes (60 grains) each on the first day, and increases this quantity by one dose every day until 32 grammes (1 ounce) are taken in the 24 hours. Very large quantities must be taken in syphilitic coma, especially when convulsions or choked disc are present. It is obvious that in specific hemiplegia and the like the iodide cannot be expected to relieve or remove the symptoms depending upon actual destruction of nervous tissue. The salts should always be given on an empty stomach, largely diluted with an alkaline water.

THE MOVEMENTS OF THE STOMACH.

ROSSBACH, of Jena, has been making some experiments, with a view to a better understanding of the movements of the stomach, derangements of which he believes to be at the bottom of many digestive troubles. The experiments were made upon dogs under the influence of profound morphia narcosis, and the results presented to the recent Congress für innere Medicin at Wiesbaden, and published in the *Deutsche med. Wochenschrift* for April 30th. He has ascertained that as soon as the stomach is filled with food the peristaltic movements begin at first feebly, increase gradually, and continue from four to eight hours. They occur only in the parts adjacent to the pylorus. The empty stomach is either entirely without motion, or exhibits only occasional and very feeble movements. The pylorus is closed during the entire period of digestion, and the emptying of the stomach begins suddenly when gastric digestion is, for the most part, accomplished. The duodenum is quite at rest during the entire period of gastric digestion.—*Medical News*, July 4, 1885.

BROMIDE OF ARSENIC IN DIABETES.

FROM solution of the bromide of arsenic in diabetes (recommended by Clemens, of Frankfurt on the Main), Békai, of Buda-Pesth, has seen very satisfactory results. Dose:—Three drops of liquor arsenici bromati dissolved in 30 grams (about ʒj) of water, and taken in three doses within twenty-four hours; every third day to be increased by one drop until the daily dose is from six to ten drops. The preparation of the solution, according to Hager, is as follows:—℞. Acidi arsenicosi (white arsenic), potassii carbonatis, āā gr. 1½. Place in a test tube, and add five drops of distilled water, and warm so that a clear solution may be formed. Dilute this with distilled water, so that the solution may weigh 10 grams (153 grains). Then add 0·2 grams of bromine (4 drops), set aside for one day, then dispense the solution.—*Wien. med. Blatt.* 2, 1883.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ACADEMY OF MEDICINE IN IRELAND.

President—J. T. Banks, M.D.
General Secretary—W. Thomson, M.D.

SUB-SECTION OF ANATOMY AND PHYSIOLOGY.

Chairman—D. J. Cunningham, M.D.
Sub-Sectional Secretary—J. A. Scott, L.K.Q.C.P.

Thursday Evening, May 7th, 1885.

The Chairman in the Chair.

Frozen Specimens illustrative of the Parts concerned in Colotomy.

The Chairman exhibited two frozen sections to illustrate the anatomy of the parts concerned in the operation of colotomy—(1) a transverse section through the third lumbar vertebra, slicing off the lower part of both kidneys, but the right being lower than the left more of it was to be seen in the section than the kidney of the opposite side; and (2) a section through the umbilicus, passing through the fourth lumbar vertebra at a point clear of the kidney.

In these sections he demonstrated the position of the descending colon in relation to the quadratus lumborum muscle, and also showed the manner in which the peritoneum was disposed.

Comparative Anatomy of the Chimpanzee.

The Chairman also exhibited a mesial section of a young male chimpanzee, and called attention to some points in which its topographical anatomy differed from that of the adult human subject, and resembled that of the human child.

Five Cases of Muscular and Vascular Anomalies.

Dr. Heuston read a paper on Five Muscular and Five Vascular Anomalies which occurred in the Carmichael College Dissecting Room

during the session 1884-85. [It will be found in the June Number of this Journal, Vol. LXXIX., page 501.]

The CHAIRMAN asked whether nervous supply of the additional heads of the biceps had been discovered?

DR. HEUSTON replied that to the four heads the nervous supply was from the musculo-cutaneous nerve, and that it was particularly examined in the quadriceps muscle.

DR. BROOKS asked if the muscle arising from the tibia was inserted into the long flexor tendons alone, or also into the accessorius. During the past session, in Trinity College dissecting room, he had noticed a similar case in which the muscle was attached entirely to the flexor tendons, passing partly into the accessorius, but chiefly into the band connected with the longus pollicis. He was enabled to trace the tendon out into three divisions. Unlike Dr. Heuston's case, the fourth tendon of the flexor brevis digitorum was not absent, but was normal.

DR. HEUSTON, in reply, said the muscle was inserted into the long flexor tendons and accessorius, chiefly into the latter, its deeper portion only passing to the tendons. The point, however, which he considered of interest was not the exact attachment, but the fact of finding the different origins for the muscle in the one subject, and also that the fourth tendon of the flexor brevis was absent.

Anomalous Coronary Artery of the Heart.

DR. BROOKS communicated a second case of anomalous coronary artery of the heart. This anomaly occurred in a subject in the dissecting-room of Trinity College, towards the close of the winter session 1884-85. A large branch arose from the right coronary artery, about one-third of an inch from its origin, and passed behind the root of the aorta and pulmonary artery; here it gave off three branches, which ran upwards on the trachea; it then divided into branches which anastomosed in a complex manner with an abnormal branch, which arose from the right anterior sinus of Valsalva of the pulmonary artery. From the anastomosis so formed, two branches ascended in a tortuous manner in front of the bifurcation of the pulmonary artery and the transverse portion of the arch of the aorta, and united into one trunk, which joined an abnormal branch arising from the left subclavian artery near the origin of the vertebral. The three branches mentioned above as ascending on the trachea, after inosculating very freely, gave off a branch to the right bronchus, and then joined a branch arising from the posterior aspect of the arch of the aorta, close to the termination of the transverse portion.

DR. PURSER said that it was difficult to say how the blood flowed in this complicated arterial arrangement. One thing was clear—viz., that in a case of direct communication between the pulmonary artery and aorta, the current must be from the latter into the former. Water would as

soon pass up a hill as the current of blood in such a case could pass from the pulmonary artery into the aorta, or, in other words, contrary to pressure.

Dr. Heuston said he had been much interested in a former case of anomalous vessel brought forward by Dr. Brooks, because he did not think it possible for arterial blood to pass as was described in both of those cases, considering the great difference of blood pressure on the right and left sides of the heart. In his opinion the vessel was a vein which, by the method of injection from the femoral artery, bursting, as it frequently did, the septum ventriculorum, allowed the injection into the right side of the heart, which then passed from the pulmonary artery into the vessel. Since the last meeting he had examined five hearts, and in three of those was able to demonstrate a vessel falling into either the right or left pulmonary sinus of Valsalva, and he was strongly inclined to think that such a vein was usually present; but the number of cases he had as yet examined did not warrant him in giving a positive opinion. In the present case, he considered the vessel to be a vein conveying the blood back from the junction of the normal and abnormal coronary vessels into the pulmonary artery.

Apparatus for Illustrating Pulse Waves.

Dr. Purser exhibited an apparatus for recording the movement of a wave along a tube, being an improvement devised by himself upon the apparatus of which Prof. Marey published an account in 1875.

Hermaphroditism in the Goat.

The Chairman made a communication on hermaphroditism in the goat. The external genitals showed merely an imperforate clitoris-looking body, and behind this an aperture just large enough to admit a goose quill, through which the animal micturated. One oval body, which felt like a testicle, was detected in a diminutive scrotum. On opening the abdomen a large bicornuous uterus was discovered, with a capacious vagina imperfectly marked off from it. This vagina opened into the uro-genital sinus, which in turn opened on the surface at the aperture before mentioned. Two well-developed testicles occupied the places of the ovaries in the broad ligament, and each showed a small hydatid of Morgagni and a large organ of Giraldè. The latter had been injected with mercury, and a connexion had thus been established between its tubes and those of the globus major and the tubuli seminiferi of the testicular body. The vas deferens ran down in the wall of the uterus (like the duct of Gaertner in the sow) and opened into the uro-genital sinus. Embedded, also, in the wall of the vagina were traces of the vesiculæ seminales. Many cases of this kind, the author stated, had been put on record, and he regarded it not as a case of true hermaphro-

ditism, but as a case of hypospadias in conjunction with a great development of the vesicula prostatica.

Dr. Purser suggested that in such cases there should be a complete and thorough microscopic examination. It was well known there were some animals in which the genital gland was neither completely male nor completely female, even in animals high in development; for instance, the common toad had an organ in the upper part of the testicle—it was not functionally an ovary, but was structurally an ovary. In amphibious animals it was by no means uncommon to find in the same animal a more or less developed testicle, and at the same time a well-developed oviduct. Again, in some of those cases when the testicles had been cut into, there had been found embedded therein bodies precisely resembling ova. So that, in those cases, the genital glands were neither ovaries nor testicles, but a mixture of both. Doubtless, if the testicles were carefully examined it would be found to contain ova, because the development of ovaries and of testicles was pretty much the same thing. A continental authority considered all animals as hermaphrodites, regarding the ova as only part of the apparatus which subsequently developed into the animal on undergoing impregnation, and that before the female cell underwent impregnation by the male, it underwent impregnation in the female by the passing through the membrane of the ovum of some of the cells of the discus proligerus. He looked on this as an original impregnation of the ovum, and that these cells were male elements which prepared the female ovum for impregnation afterwards by the male. This mixture of the male and female sexual organs was a question very much of degree, and it was not unlikely that it would be found that in the genital glands there were represented both the male and female cells, both ova and spermatozoa. He asked whether the goat had vesiculæ seminales?

The Chairman—Yes, although some considered them to represent the prostate.

Dr. Purser, continuing, said if one of the organs was missing, it would be much more likely the vesiculæ seminales than the prostate.

Interesting Anomalies relating to (1) *the Thoracic Duct and* (2) *the Nerve-supply of the Serratus Magnus and Levator Anguli Scapulæ.*

The Chairman gave details of two interesting anomalies which had been obtained in the dissecting room of Trinity College.

Dr. Purser drew attention to the mode of development of the spinal nerves, which would explain some of the cases connected with anomalies of this class.

Dr. Henry Kennedy called attention to recorded cases, where, as a general rule, the mischief occurred in the right side of the brain, and the

left side of the body was the part that suffered, and *vice versâ*. The point brought under notice was very important.

Dr. Heuston, referring to the relation of the phrenic nerve, stated that during the session he had noticed in the subject on which he was lecturing a well-marked example of Burns' nerve. On both sides, in tracing the nerve upwards, he found that the phrenic arose from both the fourth and fifth cervical nerves.

The Chairman was glad his communication had elicited such an able discussion on the development of the nerves. The same point was passing through his mind as that adverted to by Dr. Purser as to the condition found in the decussation of the pyramids. With regard to what Dr. Heuston stated, he never had the least doubt of the fact that the phrenic received fibres from the fifth.

Dr. Heuston remarked that what he was referring to was not communication between the fourth and fifth, but Burns' communication between the nerve to the subclavius and the phrenic nerve.

The Sub-Section then adjourned.

MEDICAL SECTION.

President—F. R. Cruise, M.D.; President and Fellow, King and Queen's College of Physicians.

Sectional Secretary—A. N. Montgomery, M.K.Q.C.P.

Closing Meeting, Friday, May 29, 1885.

Dr. Duffey, Vice-President of the College, and subsequently Dr. Cruise, President, in the Chair.

Notes of Visits to Contrexéville and Royat.

Dr. Cruise, President of the Medical Section, read a paper giving an account of his visits to Contrexéville and Royat-les-Bains, with some details respecting those mineral waters, and pointing out the various cases in which they are found useful. [It will be found in the August Number of this Journal, page 97]

The Chairman (Dr. Duffey) noticed that the President did not allude to the silica in those springs.

Dr. Tichborne, having examined Contrexéville water, as imported, said the analysis was almost identical with that exhibited in the President's diagram, and therefore what found its way to this country was genuine. That was not always the case. It appeared from the analysis that chlorine was associated with iodide of potassium. But it was a difficult thing to prognosticate from an analysis what was the composition

of the water, since chlorine was not originally associated with it. He was struck with the analysis of Royat water as regards the extraordinary amount of lithium—0·037, being about 2½ grs. per gallon. It was of great interest to see the water was so rich in that particular body. He asked had cæsium and rubidium been found, there being an idea that they possess qualities similar to lithia in their action.

Dr. James Little said he was not in a position to speak of the waters of Royat; but many years ago he had heard from Dr. Cruise of the value of Contrexéville waters in affections of the bladder. That practical piece of information had helped him to keep persons alive with bad bladders; and since then he had formed an opinion of those waters. Those to whom he gave the waters said they produced the effects Dr. Cruise had enumerated, and that they usually improved the appetite, kept the bowels open, and made people feel comfortable. In this country the waters appeared to be useful in that kind of dyspepsia which occurs in people of a sallow complexion and sedentary habit connected with the diseased condition of the liver. In gallstones the waters also appeared to be useful. An old London physician had told him that he gained more benefit from gout by the Contrexéville waters than any other mode of treatment. The chief virtue of the Contrexéville waters lay in their effect on the urinary organs, especially catarrh of the bladder and stone. In catarrh of the bladder he first had had an opportunity of seeing the value of the waters. It was the case of an old man in whom catarrh had arisen in connexion with imperfect emptying of the bladder through enlarged prostate. From a physician whom he met at Contrexéville he ascertained that in giving the water for stone the best plan was to give a large quantity early in the morning before breakfast, whereas for catarrh or gout the better plan was to give it in divided portions during the day. To clear away gravel, he had recommended patients to drink a bottle before breakfast. But in catarrh of the bladder he had recommended a certain portion before breakfast, luncheon, and dinner. A few months ago he saw a lady, and from the account she gave of the pain running down the thigh, he felt certain it was renal calculus. He recommended her a six weeks' course, and at the end of that time he received from her the calculus shown. With regard to Contrexéville itself, as compared with the great German baths it was rather a sad place.

Dr. H. Kennedy approved highly of Dr. Cruise's remarks. But a large number of persons were unable to visit those baths, and it was, then, well to keep in mind the work of Roberts, of Manchester, in which, by medical treatment alone, he proved that not only could calculus in the bladder be modified, but even brought away.

Dr. Finny had employed Contrexéville water in some cases of bladder affections where cystitis was a common symptom; but his experience

was not as good as that of those who had spoken—in fact, he was disappointed in the results. He did not find that it gave relief to the bladder troubles, nor that it improved the condition of the water in removing the mucus, as Dr. Cruise had experienced. But perhaps in this country the habits of the patient, combined with the climate and other causes, affected the action of the water in different ways.

Dr. T. E. Cahill having also joined in the discussion,

Dr. Cruise, in reply, said they had not sufficient knowledge of the therapeutical value of silica to attach much importance to it more than to the fluorides, or fluoride of calcium. There were no traces of cæsium, rubidium, or strontium in the waters, according to Debray. With regard to the chloride of lithium in the Royat water, he was correct in the quantity given. Contrexéville was an early watering-place, closing on the 15th of September, after which it was not a very gay place. Dr. Kennedy's reference to Roberts' remarkable observations recalled the celebrated cures published in old times; but these were effected with soft or phosphatic calculi, and would not influence a hard calculus, such as oxalate of lime, or lithic acid. Dr. Finny was not satisfied with the waters which did not give the relief required in some cases. That was his own experience in some cases, but that was also the fate of all drugs and mineral waters. The difference in the doses for the gout proper and for cases of stone he was glad to hear.

Primary Sarcoma of the Right Kidney.

Dr. Walter Smith exhibited a specimen of primary sarcoma of the right kidney, and read notes of the case. The tumour weighed nearly 4 lbs., and its microscopic structure was that of a spindle-celled sarcoma. It was removed from the body of a man, aged fifty-three years, admitted into Sir Patrick Dun's Hospital, October 25th, 1884. His family history was good, and he was in perfect health until about two years ago, when he felt a slight pain in the right side, and soon after noticed a swelling. The tumour slowly increased in size, but he was able to work as a brass finisher up to a month before admission to hospital. The tumour extended from the ribs to within two inches of the ilium, and laterally about two inches to the left of the umbilicus. There was no ascites at any time, and the cutaneous veins, anteriorly and laterally, were permanently enlarged, forming a visible network. The fingers could be depressed readily into the groove between the tumour and the ribs, and, notwithstanding that no evidence of intestine in front of the tumour could ever be detected, the diagnosis of malignant renal disease was easily made. The urine constantly contained a considerable amount of albumen, with some tube-casts, and although usually bright and clear, always became turbid (mucin) with acetic acid. From time to time he passed, *per urethram*, curious tassel-like and vermiform fragments of fibrinous clots,

mostly decolorised, and sometimes three inches in length. The man's strength very gradually gave way, and he died on April the 14th.

Post mortem, twelve hours after death.—No fluid to signify within the abdomen, and no evidence of peritonitis, except a few old adhesions. *No part of the intestine lay in front of the renal tumour:* colon adherent to its lower edge. Vena cava beneath the liver occupied by a large laminated thrombus, terminating above in a blunt cone. Right renal vein likewise filled with a soft thrombus; left renal vein free from clot.

Liver and left kidney amyloid. Double ureter on left side. Bladder healthy. Thoracic viscera healthy, except for a mass of caseous glands behind bifurcation of trachea.

No vestige of healthy renal tissue could be made out in the tumour, which was enveloped in a loose capsule of connective tissue. R. ureter pervious, not dilated. Pelvis of kidney filled with a firm, fibrinous plug. R. adrenal loosely attached to the tumour. The tumour, upon section, exhibited a mottled, patchy appearance, and was intersected by numerous fibrous bands. Under the microscope it proved to be a spindle-celled sarcoma.

The PRESIDENT said the case was remarkable for its rarity, many of the profession having passed through a long life without seeing more than one or two.

DR. HENRY KENNEDY said he had never seen it in the adult, though he had seen six cases in children. Walsh, in his celebrated book, mentioned the fact of strumous disease co-existing with malignant disease. The strumous glands most probably appeared early in life, while the malignant disease was of subsequent growth. It was scarcely compatible that the two should grow together. It was also questionable whether hæmorrhage was a direct symptom of the disease. In the cases of the children he had seen it was not present.

DR. JAMES LITTLE said he never saw a case of cancer of the kidney, but he emphasised the fact mentioned by Dr. Smith of the great importance of noticing the condition of the colon in the diagnosis of renal tumours.

DR. FINNY having seen Dr. Smith's case, confirmed what he had stated about the position of the ascending or transverse colon; but the peculiarity here was that it did not pass in front, but below the tumour. That was the difficulty. A short time ago he had a patient in hospital in whom it was easy to define the descending colon passing over the tumour, and his colleagues concurred with him that the tumour was a renal one. Another point in Dr. Smith's case was that the handling of the tumour gave little pain, and it seemed to be troublesome only from its great size and position. There was a distinct rounding of the kidney in the early stage. Afterwards that growth evidently became involved in the general mass, resulting in one continuous large tumour. The illustration of the

presence of mucin, and the peculiar objects passing down from the urethra, gave the case additional interest.

Dr. Walter G. Smith, in reply, said he was almost disposed to envy Dr. Kennedy's exceptional experience of the disease. He was not aware that anybody in Dublin had seen so many cases of the disease, even in the early period of life, whereas it was well known one-third occurred in the first decennium of life and the remaining two-thirds in later life, the period from ten to twenty-five having almost an immunity from malignant disease of the prostate or kidney. He did not think that Dr. Little or anyone could lay too much stress on the importance and generality of the rule of the existence of intestine in front of the tumour. It was a singular circumstance, but by no means peculiar to his case, that there was a comparative absence or slight degree of pain, the disease being a slow, infiltrating affection.

On the motion of Dr. Duffey, seconded by Dr. M'Swiney, the remaining papers were referred to the Council for publication, and

The Section adjourned.

OBSTETRICAL SECTION.

President—Lombe Atthill, M.D.

Sectional Secretary—William C. Neville, M.D.

Friday, March 10, 1886.

Professor Dill, of Belfast, in the Chair.

Decidual Cast of the Uterus.

Dr. F. W. Kidd exhibited a very complete decidual cast of the uterus, obtained from a patient whose history did not point to pregnancy as a cause. The size of the cast was scarcely greater than that of a non-gravid uterus, and he was inclined to regard it as an unusually perfect menstrual decidua, which had been expelled *en masse*.

Some discussion ensued as to the exact nature of the specimen. With the consent of Dr. Kidd, it was finally determined to refer it to the Committee of Reference for examination.

New Demonstration Speculum.

Dr. Neville, Sectional Secretary, exhibited for Dr. H. MacNaughton Jones, a new "Demonstration Speculum," designed to show the cervix to a number of students in a class at the same time. The image of the cervix was thrown upon a good-sized mirror, so jointed on the speculum (a metallic Fergusson's), that it could be moved freely about in any direction.

Dr. Macan and the Chairman both expressed their conviction that the instrument would achieve its objects, and prove very useful for teaching puposes.

Artificial Vesico-Vaginal Fistula for the Cure of Chronic Cystitis.

Dr. Macan read a paper on "Artificial Vesico-Vaginal Fistula for the cure of Chronic Cystitis."

Dr. Atthill considered many cases of chronic cystitis amongst the most intractable of diseases when treated by ordinary methods. He had frequently recommended the making of an artificial fistula in such cases, and looked upon this measure as the only one likely to eventuate in cure when the cystitis had lasted for some time. His great difficulty was in persuading patients to undergo such an operation.

Mr. Doyle believed that the credit of originating this plan of treatment was due to Sir H. Thompson.

Dr. Neville said that, so far as he knew, the operation under discussion was first advocated and performed by Emmet, of New York. The operation exemplified a cardinal law in surgery—viz., to give rest to an inflamed part, and was a practical application of the principles enunciated so well by Hilton in his work on "Rest and Pain."

Mr. Foy was under the impression that the operation had been done earlier than by Emmet or Sir H. Thompson.

Dr. Macan replied.

Some Points in the Diagnosis of Pelvic Hæmatocele.

Dr. Neville read, for Dr. W. J. Smyly, a paper on "Some Points in the Diagnosis of Pelvic Hæmatocele." [It will be found in the June Number of this Journal, Vol. LXXIX., page 479.]

The discussion upon this paper was then postponed until the next meeting of the Section.

OINTMENT FOR THE TREATMENT OF ITCH.

Kaposi recommends the following ointment in the treatment of itch:—℞.—Naphthol, ʒiv.; saponis virid., ʒiss.; cretæ præcip., ʒiiss.; adipis, ʒiij.—M. Apply thoroughly with friction to the regions affected and powder with starch. The ointment has no disagreeable odour and does not stain the garments. It, however, causes cutaneous inflammation in the form of red spots, urticaria or disseminated papules of eczema, which are not severe. For nursing and young children the naphthol should be diminished to the proportion of 5 to 100.—*L'Union Médicale*, July 25, 1885; and *Med. News*, Aug. 15, 1885.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P., F. R. Met. Soc.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, July 18, 1885.

Towns	Population in 1885	Births Registered	Deaths Registered			Deaths from Seven Zymotic Diseases							Deaths from Phthisis	Death-rate per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		From all causes	From seven Zymotics
Dublin,	353,082	763	723	109	161	1	17	20	2	15	26	13	97	26·7	3·6
Belfast,	219,222	540	434	72	52	–	88	3	–	16	2	11	61	26·4	7·2
Cork,	80,124	144	156	17	37	–	–	1	1	2	5	4	27	25·3	2·1
Limerick,	38,562	87	63	16	19	–	–	1	–	1	4	1	8	21·3	2·4
Derry,	29,162	61	37	3	7	–	–	–	–	–	1	–	11	16·5	0·5
Waterford,	22,457	49	32	8	8	–	3	–	–	–	–	–	1	18·5	1·7
Galway,	15,471	26	16	2	4	–	–	–	–	–	–	1	2	13·5	0·9
Newry,	14,808	27	28	6	7	–	–	–	–	–	–	–	6	24·6	–

Remarks.

In the eight selected towns included in the foregoing Table the highest death-rates are 26·7 per 1,000 of the population annually in Dublin, 26·4 in Belfast, 25·3 in Cork, and 24·6 in Newry; the lowest rates are 13·5 in Galway, 16·5 in Derry, 18·5 in Waterford, and 21·3 in Limerick. The rate of mortality from seven chief zymotics ranged from 7·2 per 1,000 per annum in Belfast, 3·6 in Dublin, 2·4 in Limerick, 2·1 in Cork, 1·7 in Waterford, 0·9 in Galway, and 0·5 in Derry to *nil* in Newry.

The recorded deaths represent a rate per 1,000 of the population annually of 18·4 in twenty-eight large English towns (including London, in which the rate was 18·1), 24·1 in the sixteen chief towns of Ireland, 22·0 in Glasgow, and 15·2 in Edinburgh. There is a further decrease (from 19·6 to 18·4) in the mortality in the English towns generally; in London it has been apparently stationary, namely 18·1 per 1,000 per annum. As a matter of fact, however, the mortality rose steadily week

by week in the metropolis, the weekly rates being 16·3, 17·5, 18·0, and 20·6. The death rate has again fallen in Glasgow (from 24·2 to 22·0). In Edinburgh it has fallen remarkably (to 15·2 compared with 18·7). In the Irish towns the rate of mortality has once more fallen decidedly, from 27·4 to 24·1. If the deaths (numbering 27) of persons admitted into public institutions from localities outside the Dublin Registration District are deducted, the death-rate of that district becomes 25·7, while that of the portion of the district included within the municipal boundary is only slightly higher, namely, 26·7. In London the epidemic of small-pox happily shows a continuous decrease—the deaths were 105, compared with 193, 239, 179, 109, 197, and 229 in the six preceding periods of four weeks each. The weekly number of deaths from this disease since the beginning of the year have been 56, 42, 70, 58, 59, 60, 56, 44, 37, 27, 35, 23, 24, 39, 40, 49, 51, 48, 66, 75, 50, 55, 62, 39, 37, 28, 39, 23 and 15 respectively. The deaths from diarrhœal diseases in the same city, which numbered 54, 51, 52, and 78 in the four preceding periods of four weeks each, were 415.

Acute febrile zymotics were returned as the cause of death in 113 instances in the Dublin district, compared with a ten-years' average of 97·7 in the corresponding period and 105 in the previous four weeks. The 113 deaths included 17 from measles, 20 from scarlet fever, 26 from "fever," 15 from whooping-cough, 13 from diarrhœal diseases, 2 from diphtheria, and 1 from smallpox. The epidemic of scarlet fever shows a recrudescence, the deaths being 9 more than in the previous four weeks. Of the 26 deaths referred to "fever," 7 were ascribed to typhus, and 14 to enteric fever, while in 5 instances the exact nature of the fever was either not specified or was ill-defined. The deaths from fever were 13 more than those registered (13) in the previous four weeks. Eleven children aged between one and five years succumbed to scarlet fever, and one victim to this disease was under one year old. The deaths from whooping-cough rose from 9 in the previous four weeks to 15. Of the victims of whooping-cough 7 were between one and five years of age, and 7 were infants of less than twelve months old.

In the first week of the period, a death from smallpox was again registered in the Donnybrook district. It was the second death from this disease which had occurred in Dublin since May, 1881. The victim was a nurse who contracted smallpox from a lady whose death was alluded to in the last Report. A fatal epidemic of cerebro-spinal fever still prevailed in some of the southern suburbs of Dublin. Ten deaths were referred to this disease, against 18 in the previous four weeks.

Measles caused 88 deaths in Belfast, compared with 162 in the preceding period, 17 in Dublin, and 3 in Waterford. In Waterford the epidemic of this disease is almost stationary; but in Dublin and Belfast it is decreasing quickly. Since the beginning of the year the weekly

numbers of deaths in Dublin have been 3, 3, 3, 5, 3, 5, 10, 11, 8, 10, 11, 16, 12, 13, 19, 15, 15, 17, 12, 14, 17, 13, 9, 11, 6, 7, 3, 4 and 3 respectively. Of the 17 victims to the disease, whose deaths were registered in the four weeks, 15 were under 5 years of age, including one infant of less than twelve months.

Scarlet fever was fatal in only 3 instances in Belfast, in one case in Cork, and in one case in Limerick. Diarrhœal diseases were credited with only 30 deaths in the eight towns, compared with 18, 27, and 32 in the three previous periods of four weeks. In London the weekly registered deaths from diarrhœal diseases were 44, 51, 110, and 210 respectively.

In the Dublin Registration District 763 births and 723 deaths were registered, compared with 816 births and 713 deaths in the previous four weeks. The births were those of 402 boys and 361 girls. The deaths of infants under one year were 109 against 116 in the previous four weeks; those of persons aged 60 years and upwards were 161, compared with 146 in the previous period.

The deaths referred to pulmonary consumption in the eight towns were 213, compared with 243, 277, 252, 270, 244, and 239 in the six preceding periods of four weeks each. In Dublin diseases of the respiratory organs are stated to have caused 117 deaths, against an average of 103·2 in the corresponding four weeks of the previous ten years, and compared with 120, 177, 207, 246, 225, and 213 in the six preceding periods of four weeks each. The 117 deaths included 66 from bronchitis (average = 65·6) and 30 from pneumonia (average = 20·7). Of the 66 persons who succumbed to bronchitis, 15 were infants under twelve months, whereas 18 had passed their sixtieth year.

On Saturday, July 18, 1885, there were under treatment in the principal Dublin hospitals 2 cases of smallpox, 25 of measles, 32 of scarlet fever, 13 of typhus, 10 of enteric fever, and 4 of pneumonia.

The mean temperature of the four weeks was 58·1° in Dublin, 55·5° in Belfast, 57·2° at Roche's Point, Co. Cork, 57·4° at Edinburgh, and 61·3° at Greenwich. The minimal readings of the thermometer in the screen were 44·3° in Dublin, 37° at Belfast, 47° at Cork, 41·8° at Edinburgh, and 44·7° at Greenwich. The maximal temperatures were 71·7° in Dublin, 74° at Belfast, 68° at Cork, 72·3° at Edinburgh, and 84·7° at Greenwich. The returns from Glasgow in the last week of the period are wanting.

The weather was again very favourable—the mean temperature showing an advance on that of the previous period—of 2·3° at Greenwich, and 2·0° in Dublin.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of July, 1885.

Mean Height of Barometer,	30·162 inches.
Maximal Height of Barometer (on 22nd at 9 a.m. and 9 p.m., also on 26th and 28th, at 9 a.m.)	30·386 ,,
Minimal Height of Barometer (on 19th, at 9 p.m.),	29·649 ,,
Mean Dry-bulb Temperature,	60·6°.
Mean Wet-bulb Temperature,	57·0°.
Mean Dew-point Temperature,	53·9°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·420 inch.
Mean Humidity,	79·1 per cent.
Highest Temperature in Shade (on 25th),	77·0°.
Lowest Temperature in Shade (on 1st),	44·7°.
Lowest Temperature on Grass (Radiation) (on 1st),	35·4°.
Mean Amount of Cloud,	53·4 per cent.
Rainfall (on 10 days),	1·154 inches.
Greatest Daily Rainfall (on 19th),	·542 inch.
General Directions of Wind,	W., S.W., W.N.W.

Remarks.

The month was very fine, and for July unusually dry. There were but 10 rainy days, and the rainfall amounted to only 46 per cent. of the average (1·154 inches compared with 2·499 inches). The mean temperature was only equal to the average, for the great heat of the last ten days was counterbalanced by a cold period which lasted from the 12th to the 20th.

The mean height of the barometer was 30·162 inches, or 0·240 inch above the average value for July—namely, 29·922 inches. The mercury rose to 30·386 inches at 9 a.m. and 9 p.m. of the 22nd, as well as at 9 a.m. of the 26th and 28th, and sank to 29·649 inches at 9 p.m. of the 19th. The observed range of atmospherical pressure was, therefore, 0·737 inch—slightly less than three-quarters of an inch. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 60·6°; that calculated by Kaemtz's formula from the means of the daily maxima and minima was 59·6°, or precisely the average mean temperature for July, calculated in the same way, in the twenty years, 1865–84, inclusive (59·6°). The arithmetical mean of the maximal and minimal readings was 60·8°. On the 25th the thermometers in the screen rose to 77·0°—wind S.E.; on the 1st they fell to 44·7°—wind W.N.W. The minimum on the grass was 35·4° on the 1st. The rainfall was 1·154 inches, distributed over 10 days. The average rainfall for July in the twenty years, 1865–84, inclusive, was

2·499 inches, and the average number of rainy days was 17·6. Both rainfall and rainy days, accordingly, were, as in June, decidedly below the average. At Greystones, Co. Wicklow, the rainfall for the month was ·730 of an inch, distributed over 10 days.

There was no hail; nor did electrical disturbances occur near Dublin. The atmosphere was foggy on the 19th, 22nd, 23rd, and 26th, and frequently hazy during the anticyclonic period after the 20th.

Quiet, fine weather held at the beginning of the month, when the barometer was high in Ireland and England. On the evening of the 1st strongly refractive cirri showed in the northern sky.

During the week ending Saturday, the 11th, the type of weather was south-westerly—the barometer was high and comparatively steady in France and Germany, relatively low over the Atlantic to the W.N.W. and N. of the British Isles. Several atmospherical depressions skirted the western coasts of Ireland and Scotland on their path northeastwards, and these caused squally, showery weather in the countries named—more particularly in their western and northern districts. In Dublin the thermometer rose to 71·7° in the shade on Friday, the 10th.

Although cool and cloudy, and by no means settled, the weather was again generally favourable in the week ending Saturday, the 18th. The barometer was once more chiefly highest over the Bay of Biscay and France, lowest to the northward of Scotland. The winds varied between N.W. and S.W., and blew freshly at times. The amount of cloud was large—particularly in Ireland—so that the day temperatures were not high. Very warm weather was experienced in the Baltic during this week—at Stockholm the 8 a.m. readings of the thermometer were 76°, 77°, 75°, 70°, 62°, 66°, and 63° respectively, and temperature rose to 88° in the shade on both the 13th and the 14th.

In the third week, although at first dull, cool, and rainy, the weather became quiet, damp, and foggy, and ultimately bright and very warm—Saturday, the 25th, was in fact the hottest day so far experienced in Dublin during the present summer. Atmospherical pressure was very unsteady on the 19th and 20th, when irregular depressions passed eastwards across the United Kingdom. Rain fell very generally, especially on Sunday, the 19th, when falls of about half an inch or upwards occurred in Connaught and Leinster, in North Wales, and in the N.W. and N.E. of England. On the 21st atmospherical pressure became uniformly high—30·30 inches or upwards—and consequently calm and fine, but foggy, weather prevailed. Next day, with the barometer steady at 30·386 inches, thick, fine rain fell for several hours in Dublin, and the afternoon was extremely dull, sultry, and oppressive. Calm, hazy, hot weather now set in, culminating on Saturday, the 25th, in Ireland, where the maximal temperatures ranged from 77° in Dublin to 83° at Londonderry. Late in the day very electrical cirri showed in the sky. The wave of heat also

passed over Scotland on this day, when the thermometer rose to 83° at Aberdeen and to 82° at Leith. In England even more excessive heat was experienced both on the 25th and on the 26th; the maxima were—86° at Oxford, 87° in London, 88° at Cambridge, 89° at Loughborough in Leicestershire, 90° at Strathfield Turgiss in Hampshire, and 91° at Leicester and Southampton.

In the course of Sunday, the 26th, a wave of colder air passed in a southerly or south-easterly direction across the British Islands, filling the sky with clouds and causing a light drizzling rain at some exposed stations. Meanwhile the central area of high atmospherical pressure became established off the east of Scotland, and moderate N.E. to E. winds set in at nearly all British stations. During this, the closing period of the month, the weather remained singularly warm in the centre, S.W., W., and N.W. of Ireland. The maxima of the last eight days were—at Parsonstown, 78°, 79°, 77°, 71°, 72°, 76°, 74°, and 77°; at Valencia Island, 73°, 72°, 72°, 77°, 78°, 75°, 75°, and 74°; at Belmullet, 71°, 62°, 60°, 62°, 70°, 74°, 75°, and 72°.

PERISCOPE.

THE FUNCTION OF THE THYROID GLAND.

Most works on physiology pass over the thyroid gland with a very superficial mention. It is said to exercise some part of importance in fœtal life, no one knows what. In extra-fœtal life it is said to partially atrophy, and to be merely a useless organ to the adult—rather worse than useless, as in goître it becomes inconvenient, and sometimes dangerous. This shows how little we know about human physiology. Recent researches have shown that the thyroid gland has an intimate and all-important relation to the highest functions of man—those of his brain. This fact was first developed by the extirpation of the gland in goître—a proceeding which, according to the received views, ought to be wholly indifferent to the economy. Such is far from the case. After the total extirpation of the gland the subjects steadily lose their mental vigour, the features become heavy, the speech slow and dull, the muscular system weakens, and the skin turns rough, thick, and hard; in short, a condition gradually supervenes strikingly like that called by Charcot *myxœdema*, or the pachydermatic cachexia. They become *cretins*. If ever so little of the gland remains, it is sufficient to prevent these changes; but its complete removal surely entails them. Experiments on dogs and cats yield similar results. The animals do not long survive, but are attacked with convulsions, somnolence and paralysis, which prove fatal. Two theories have been advanced to explain these changes. One is that of Liebermeister, who maintains that the thyroid gland is

the regulatory organ of the encephalic circulation, and that its abstraction throws this into chronic disorder. The other is that of Professor Bruns, of Tübingen. He believes that the thyroid is either a depuratory gland which excretes certain substances poisonous to the nervous system, or that it fabricates certain substances indispensable to nervous vigour—which of the two he is uncertain. The very important practical conclusion remains uncontested, that in all operations for goître a small portion of the gland should be allowed to remain.—*The Med. and Surg. Reporter*, Aug. 15, 1885.

POISONOUS QUALITIES OF SULPHUROUS ACID.

In indigo manufactories and straw-bleaching establishments, and in similar institutions, it has long been known that the air impregnated with the vapours of sulphurous acid is very injurious to inhale. But the question, what percentage of admixture of the acid to the atmosphere becomes dangerous to the human being, though settled long since with reference to carbonic oxide and carbonic acid, has never been determined as regards sulphurous acid. Dr. Masonori Ogata, in Japan, has recently inquired into this point, and published the results of his researches in the *Arch. f. Hygiene*, Bd. ii., Heft. 2, 1885. These investigations took place under the supervision of v. Pettenkofer. Air containing one-twentieth of one per cent. of the acid can no longer be inhaled without injury. The effect becomes apparent mainly in the blood, sulphurous acid being a virulent blood-poison. The animals experimented upon did not die from want of O, but from the presence in the blood of a CO hæmoglobin, entirely foreign to the normal composition of the circulating fluid. Corpuscles whose O has been taken up by the SO_2, and which contain therefore SO_3, even in very minute quantities, act as poisonous agents. In recent times disinfection of the atmosphere with sulphurous acid has been recommended in some epidemics. While unquestionably effectual, its application will have to be practised with care, by reason of the facts above elucidated.—*The Med. and Surg. Reporter*, Aug. 15, 1885.

THE USE OF IODINE IN DIPHTHERIA.

Adamson (*Practitioner*) adds his testimony to the efficiency of the iodine treatment. He lost only two patients out of fifty-five treated with the tincture alone, although some of the cases were very grave. For adults he gives from five to seven minims every hour, and for children between six and twelve years of age from two to three minims every two hours. Special mention is made of syrup of quince for disguising the taste of the drug.—*N. Y. Med. Jour.*, Aug. 15, 1885.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CLXVI.—OCTOBER 1, 1885.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. XI.—A Case of Artificial Vesico-Vaginal Fistula for the Cure of Chronic Cystitis. By ARTHUR V. MACAN, M.B., Master of the Rotunda Hospital, - - - - - - - 273

ART. XII.—Dissecting Aneurysm (Shekleton's) of the Thoracic Aorta, extending to the Termination of the Common Iliacs. By J. MAGEE FINNY, M.D., Dubl.; F.K.Q.C.P.I.; King's Professor of Practice of Medicine in the School of Physic, Ireland; Clinical Physician to Sir Patrick Dun's Hospital—(Illustrated), - - - 276

ART. XIII.—On the Necessity of an International Pharmacopœia, considered from the point of View of the Medical Profession. By F. J. B. QUINLAN, M.D., Dubl.; Professor of Materia Medica and Therapeutics, Catholic University Medical College; an Examiner in the same, Royal University of Ireland, - - - - 286

ART. XIV.—Experimental Researches upon Tuberculosis and Scrofula. By EDWIN WOOTON, - - - - - - - 290

ART. XV.—The Changes occurring in the Skin in some Forms of Disease. By HENRY T. BEWLEY, M.B., B.Ch., A.B., Univ. Dubl.; Sch. and Ex-Med. Sch.; First Senior Moderator and Large Gold Medallist in Natural Science; Assistant to the Professor of Physiology, and formerly Assistant Demonstrator of Anatomy, Trinity College, Dublin—(Illustrated)—(*concluded*), - - - 305

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. The British Pharmacopœia, 1885, - - - - - 317

2. A Practical Treatise on the Diseases of Women. Prepared with Special Reference to the Wants of the General Practitioner and Advanced Student. By JOHN THORBURN, M.D., F.R.C.P., - 318

PAGE

3. Transactions of American Medical Societies:—1. Transactions of the Medical and Chirurgical Faculty of the State of Maryland. Eighty-sixth Annual Session, held at Baltimore, Md., April, 1884. 2. Transactions of the New York State Medical Association for the Year 1884. Vol. I. Edited for the Association by AUSTIN FLINT, Jr., M.D., of New York County, - - - - - 319
4. Aids to Botany. By ARMAND SEMPLE, M.B., - - - 325
5. The Advertisers' Guardian, 1885. By LOUIS COLLINS, - - 326
6. (1) Unbelief: an Essay addressed to Young Men of every Christian Denomination. By MAURICE C. HIME, M.A., LL.D. (2) A Schoolmaster's Retrospect of Eighteen and a Half Years in an Irish School. By MAURICE C. HIME, M.A., LL.D., - - - 326
7. Works on Diseases of the Skin:—1. Lectures on Acne, Acne Rosacea, Lichen, and Prurigo. By TOM ROBINSON, M.D. 2. The Pharmacopœia of the British Hospital for Diseases of the Skin, London. Third Edition. Edited by BALMANNO SQUIRE, M.B. 3. Pamphlets on Diseases of the Skin. By DR. H. W. STELWAGON, - - 327
8. The Oleates: an Investigation into their Nature and Actions. By JOHN V. SHOEMAKER, A.M., M.D., - - - - 328
9. Electricity, and its Manner of Working in the Treatment of Disease. By W. E. STEAVENSON, M.D., M.R.C.P., - - - 328
10. On the Coca of Peru and its Immediate Principles: their Strengthening and Healing Powers. By J. L. W. THUDICHUM, M.D., - 329
11. An Introduction to Practical Organic Analysis. By G. E. R. ELLIS, 329

PART III.—MEDICAL MISCELLANY.

ACADEMY OF MEDICINE IN IRELAND:—

SUB-SECTION OF STATE MEDICINE.

Relative Disease and Death-rate in Town and Country. By DR. GRIMSHAW, Registrar-General for Ireland, - - - 330
Compulsory Notification of Infectious Disease. By DR. JACOB, - 332

SURGICAL SECTION.

Living Specimen. Exhibited by MR. EDGAR FLINN, - - 336
Specimens by Card. Exhibited by MESSRS. THORNLEY STOKER, L. HEPENSTAL ORMSBY, WHEELER, STOKES, EDGAR FLINN, and THOMSON, - - - - - - - - 336
Treatment of Stricture by Internal Urethrotomy. By MR. W. THORNLEY STOKER, - - - - - - 337

PATHOLOGICAL SECTION.

So-called "Malignant Growths." By MR. FOY, - - - 344
Separation of the Upper Epiphysis of the Femur. By MR. KENDAL FRANKS, - - - - - - - - 345
Sarcoma of the Jaw. By MR. ABRAHAM, - - - 346
Tubercle of the Tonsils. By MR. ABRAHAM, - - - 346
Tape-worm. By MR. M. A. DONNELLY, - - - - 347

PAGE

SANITARY AND METEOROLOGICAL NOTES. Compiled by J. W. MOORE, M.D., F.K.Q.C.P., F. R. Met. Soc.:—

Vital Statistics of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, August 15, 1885, - - - 349

Meteorology—Abstract of Observations made at Dublin for Month of August, 1885, - - - - - - 352

PERISCOPE:—

The Therapeutic Value of Chloride of Calcium, - - - 316

Tannate of Mercury for Syphilis, - - - - - 329

Belladonna as a Means of producing Toleration of Iodide of Potassium, - - - - - - - - 348

Hopein, - - - - - - - - 354

Compound Chrysarobin Pigment, - - - - - 355

Remedies for Skin Diseases in the Form of Spray, - - - 355

Erysipelas of the Larynx and Pharynx, - - - - 356

IN MEMORIAM—BENJAMIN GEORGE MACDOWEL, M.D., Univ. Dubl., F.R.C.S.I., - - - - - - - 357

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XI.—*A Case of Artificial Vesico-Vaginal Fistula for the Cure of Chronic Cystitis.*[a] By ARTHUR V. MACAN, M.B.; Master of the Rotunda Hospital.

THERE are probably few who have not in their practice met with women suffering from chronic cystitis, to cure which all the ordinary remedies seemed powerless. That such cases, when uncomplicated with renal disease, are usually due to some form of septic infection of the mucous membrane of the bladder is, I think, nowadays hardly disputed, and the treatment that is found most successful—viz, the use of antiseptic injections—certainly supports this view. If these, however, fail, we have it still in our power to aid and assist them by thorough drainage of the bladder. Some practitioners have sought to attain this end by leaving a catheter permanently in the bladder, but the objection to this plan of treatment is, that unless great care be used to disinfect the catheter it may itself produce decomposition of the urine, which leads in its turn to further cystitis. The most obvious and certain method of obtaining thorough drainage of the bladder is by making an artificial vesico-vaginal fistula near the neck of the bladder. As this operation has been but rarely resorted to in this country, I trust that the details of the following case, in which this treatment was

[a] Read in the Obstetrical Section of the Academy of Medicine in Ireland, April 10, 1885.

adopted and proved eminently successful, may prove of interest to the members of the profession:—

Case.—Mary D., aged thirty-eight, was admitted to the Rotunda Hospital on March 4th, 1884, having been sent up by Dr. Stoney, of Abbeyleix. Was last confined on April 9th, 1879, being delivered by forceps, after a twenty-four hours' labour. Immediately after delivery incontinence of urine set in. For this she came up to the Rotunda Hospital during the mastership of Dr. Atthill. He operated on her three times, and at the third operation turned the cervix uteri into the bladder. After this the woman went home, but she says there was still a leak of urine per vaginam.

Nearly five years after this she entered the Rotunda Hospital under my care, as she then had a vesico-vaginal fistula, and for about eight months had been suffering great pain in the bladder, with frequent discharge of blood. On making a vaginal examination a fistula was detected high up in the vagina, through which a sound could be passed into the bladder, on withdrawing which some bloody urine flowed into the vagina. On passing a sound per urethram a large stone was readily detected in the bladder.

On April 15th, 1884, I proceeded to remove the stone, in which operation I was kindly assisted by Dr. Corley. I first dilated the urethra to No. 18 Hegar, and introduced my finger into the bladder, and then making a bimanual examination easily felt the stone. This I got a firm hold of with a lithotomy forceps, but all my efforts to remove it through the dilated urethra failed. I then introduced an ordinary male lithotrite, and endeavoured to seize the stone, but for a long time all my efforts failed from the bladder contracting tightly on the stone. At last I succeeded and removed several large pieces with the forceps, and then washed out the remainder with Bigelow's apparatus. The bladder was washed out daily after the operation, and shreds of mucous membrane came away for a considerable time; but the woman made a good recovery, and on May 2nd I operated on the vesico-vaginal fistula. The union was not, however, perfect, and so on June 5th I operated on her again, and this time successfully. Soon afterwards the symptoms of chronic cystitis became well marked and defied all treatment. The urine finally became so stinking that passing a catheter was a most unpleasant duty, and it contained shreds of the lining membrane of the bladder, just like small pieces of diphtheritic membrane. Having, therefore, exhausted all ordinary treatment, and the case growing gradually worse instead of better, I determined to try the effect of free drainage. With this view I proceeded on October 24th, 1884—more than six months after the operation for stone—to make an artificial vesico-vaginal fistula. A sound was passed into the bladder and its point made to project into the

vagina at a point corresponding to the base of the bladder, and on this the vesico-vaginal septum was divided. I then sewed the vaginal and vesical mucous membranes together. This I did with a twofold object—first, to prevent all hæmorrhage, and secondly, by covering over the raw surfaces with mucous membrane, to try and prevent the vesico-vaginal fistula contracting and closing before the mucous membrane of the bladder had become healthy. On examining the wound two days afterwards the silk sutures were found thickly encrusted with the salts of the urine; and the mucous membrane of the vagina, from the seat of the fistula to the vulvæ, was of a brownish-yellow colour and thick and leathery. It was slightly separated round the edges, and on getting a firm hold of this loosened edge with a forceps I found I could peel the altered mucous membrane off the vaginal walls. This I now exhibit, and you will see that it has just the appearance of wet chamois leather. The surface left behind was raw and bleeding, but after a few days it became more healthy. After the operation the bladder was washed out daily with a weak antiseptic solution. This gave intense pain for a long time, small particles of diphtheritic-looking membrane being constantly detached from the interior of the bladder. By slow degrees the urine became more healthy, and these small particles of mucous membrane got scarce and finally quite disappeared, so that I looked on the cystitis as cured. I proceeded, therefore, on February 12th, 1885—or nearly four months after I had made the fistula—to close it again, and the woman has since been able to retain her water thoroughly. An attack of jaundice compels her still to remain in hospital, but the cystitis is thoroughly cured.

There is one point about the formation of the stone in this case to which I would like to draw attention. When there is a small fistula situated high up in the vagina the condition of the bladder seems to me to resemble very closely a cistern of water with an overflow pipe near the top. The urine accumulates in the bladder and finally reaches the level of the fistula, through which it escapes. The bladder is therefore never excited to contract and expel its contents per urethram, and the urine below the fistula stagnates and deposits its salts, which form a calculus.

In a very similar case of vesico-vaginal fistula that has more recently come under my notice I ventured to say that we should probably find a calculus in the bladder, and my supposition proved to be correct.

Since I operated on this woman I have adopted the same plan of treatment in a very remarkable case of cystitis, and with equally gratifying success. As, however, I intend bringing the latter case

before the Academy at some future time, I will not enter into any of the particulars at present.

When considering afterwards the great difficulty experienced in this case in getting hold of the stone with the lithotrite and crushing it, and the unavoidable injury done to the walls of the bladder during the operation, and further the danger of the patient suffering from permanent incontinence of urine from over-distension of the urethra, I determined that in future I would remove any large stone by incision of the vesico-vaginal septum in preference to the method adopted on this occasion.

I have since had the opportunity of putting this resolution into action, and from my experience in these two cases I have no hesitation in saying that the method by incision of the vesico-vaginal wall and subsequent closure of the wound by sutures is infinitely preferable in all cases where the stone is of large size. The exact limit, where danger of permanent incontinence from dilatation of the urethra commences, was shown by the late Prof. Simon, of Heidelberg, to be a diameter of 2 cm. Should the stone, therefore, exceed this limit, I would remove it by incision, rather than by crushing with a lithotrite.

ART. XII.—*Dissecting Aneurysm (Shekleton's) of the Thoracic Aorta, extending to the termination of the Common Iliacs.*[a] By J. MAGEE FINNY, M.D. Dubl., F.K.Q.C.P.I.; King's Professor of Practice of Medicine in the School of Physic, Ireland; Clinical Physician to Sir Patrick Dun's Hospital.

THE specimen of aneurysm of the descending and abdominal aorta which I exhibit[b] would have little right to be the subject of any comments, or of a place in the "Transactions of the Academy," were it not an example, and that a very typical one, of the dissecting aneurysm first described and figured by Shekleton in the *Dublin Hospital Reports*, Vol. III., p. 231, and that it presents many collateral points of pathological interest. Thanks to the kindness of the Curator of the Museum of the Royal College of Surgeons, I have here the two specimens which formed the basis of Dr. Shekleton's paper. As this specimen was taken from the body of a patient who had been under observation and treatment for a year and a half, it has an interest which was wanting in those of Dr.

[a] Read in the Pathological Section of the Academy of Medicine in Ireland, Friday, April 17, 1885.

[b] This specimen is preserved in the Pathological Museum, Trinity College, Dublin.

Shekleton which were taken from subjects in the dissecting-rooms of this College.

The following is an abstract of the clinical record of the case, which, however, I will anticipate by remarking that it is entirely silent on the subject of the dissecting aneurysm, and deals principally with the diagnosis and curative treatment of sacculated aneurysm of the abdominal aorta:—

J. W., aged forty-three, married (with healthy grown-up children), a tailor by occupation, was admitted under my care into Sir Patrick Dun's Hospital, on September 28th, 1883, with the symptoms and physical signs of aneurysm of the abdominal aorta. There was an absence of all history of intemperance, syphilis, rheumatism, or injury to which it could be attributed, and at the time of admission, and indeed for many months subsequently, the urine was normal and free from albumen. For two months before I saw him he had complained of pain in the abdomen and back, which, latterly, radiated both upwards and downwards, extending to the left groin and thigh, and was of so severe a character as to prevent his sleeping or attending to his occupation. He also stated that while walking he occasionally experienced a faint feeling, and had palpitation of the heart. He was of a bright, cheery and contented disposition, and, except for an anæmic appearance, visible temporals, a slight "arcus senilis," and a strong rapid pulse (100), he did not at all look the subject of grave arterial disease.

Physical examination demonstrated the existence of a large tumour connected with the abdominal aorta, situated above its bifurcation. It measured 3½ inches long × 2½ inches broad. It lay above the umbilicus and a little to the left of the middle line, and conformed to the typical signs of a sacculated aneurysm—viz., distensile pulsation, synchronous with the heart's beat; immobility to handling, change of posture, or deep inspiration; the presence of a systolic blowing sound over an area of two square inches, diminishing as the stethoscope was moved towards the ensiform cartilage, or over the iliacs; and, lastly, the presence of a similar murmur in the back over the first three lumbar spines.

As the case was considered one well suited for Tufnell's modification of Valsalva's treatment, the patient was at once kept in the recumbent posture, placed on a regulated but liberal dietary, and given iodide of potassium in 5 and, later on, 7 grain doses. As he experienced relief to all pain and uneasiness in a very short time, the treatment was faithfully carried out by the patient for two months while in hospital, and after he went home for another two months. He was then readmitted for the purpose of examination of the aneurysm. When leaving hospital, December 15th, 1883, the dorsal murmur was no longer audible, and the sac of the aneurysm was very firm below, and at either side, though not

above, and the murmur, which was faint and distant at the lower, was still distinct at the upper part. The clinical note made in March, 1884, was to the effect that the tumour was firmer, and heaving rather than distensile; the murmur was not altogether gone, but was distantly heard, and confined to a small area at the upper left side of the aneurysm. The patient was now allowed to sit up for a time each day, and as, after four months' treatment and one month's subsequent observation, no relapse or change for the worse seemed to take place in the aneurysm, he was discharged cured at the end of April, 1884. He was soon able to walk about the streets slowly, and in June he went back to his work as a tailor, doing light jobs, without experiencing any return of abdominal uneasiness or dorsal pain.

It is right, however, to say that while the local disease was cured, his general condition was one by no means free from anxiety, as he had passed through two attacks of pericarditis during the foregoing five months. Each attack was of short duration, and did not pass the stage of lymphy exudation; at the same time the heart had become increased in size, and showed signs of simple hypertrophy, though without valvular incompetency. From these indications the prognosis as to complete restoration to health was most guarded. How wise this opinion proved to be the sequel soon showed. In September he unfortunately undertook too heavy a job, and worked beyond his powers and against time, often till late at night. The strain proved too much, and he was struck down with apoplexy, followed by an incomplete right-sided hemiplegia and aphasia. For this he again came under my care in hospital. Two features of some interest were then present—one was the occurrence of albuminuria along with a few granular casts, showing that the kidneys were undergoing fibroid degeneration; and the other was the presence of well-marked Cheyne-Stokes' respiration, particularly on the patient lying low down on his back in bed.

From this attack of hemiplegia he never recovered, and, although he was well enough to walk about again and to leave hospital, he showed evidences of increasing enfeeblement of the motorial and psychical powers of the brain, and had a second attack in December which left him bedridden, and he died in hospital of asthenia on February 10th, 1885.

It is worth noting that during the eleven months subsequent to the time when the sacculated aneurysm was considered cured (March, 1884), there was never any return of pain or other evidences of a return of the disease.

FRONT VIEW

A, B = Upper and lower opening of Dissecting Aneurism (C)

D = Secondary sacculated aneurisms, consolidated by fibrine, springing from Aneurismal Tube

E = Aneurism of Cœliac Axis

R = Renal Arteries

DISSECTING ANEURISM OF AORTA.

Another comment I would make, and that is to the effect that there is no indication from the symptoms during the period of a year and a half within which he was continuously under my observation, nor in his history prior to the time I first saw him, as to when or how the dissecting aneurysm of the aorta commenced, or as to whether its presence in any way added to or modified the signs of the prominent saccular abdominal aneurysm.

A *post mortem* examination was made by Dr. Kiddle, our efficient house surgeon, to whom my indebtedness is great for the careful and complete manner in which the heart and aorta and iliacs were removed in their totality. It was confined to the thoracic and abdominal cavities. The lungs, liver, and spleen were healthy. The anterior surface of the heart near the apex was covered with a layer of organised lymph, the result of pericarditis. The heart itself was greatly enlarged, its increase in size and weight being due to simple hypertrophy of the left ventricle. The valves were competent; the anterior curtain of the mitral had, however, a small patch of atheroma near its basal attachment, and one of the aortic valves was slightly fenestrated. Subsequent examination of the parts removed revealed a condition of pathological changes in the arterial system, not alone entirely unexpected, but, as viewed from the small amount of suffering and other subjective and objective symptoms during life, most surprising.

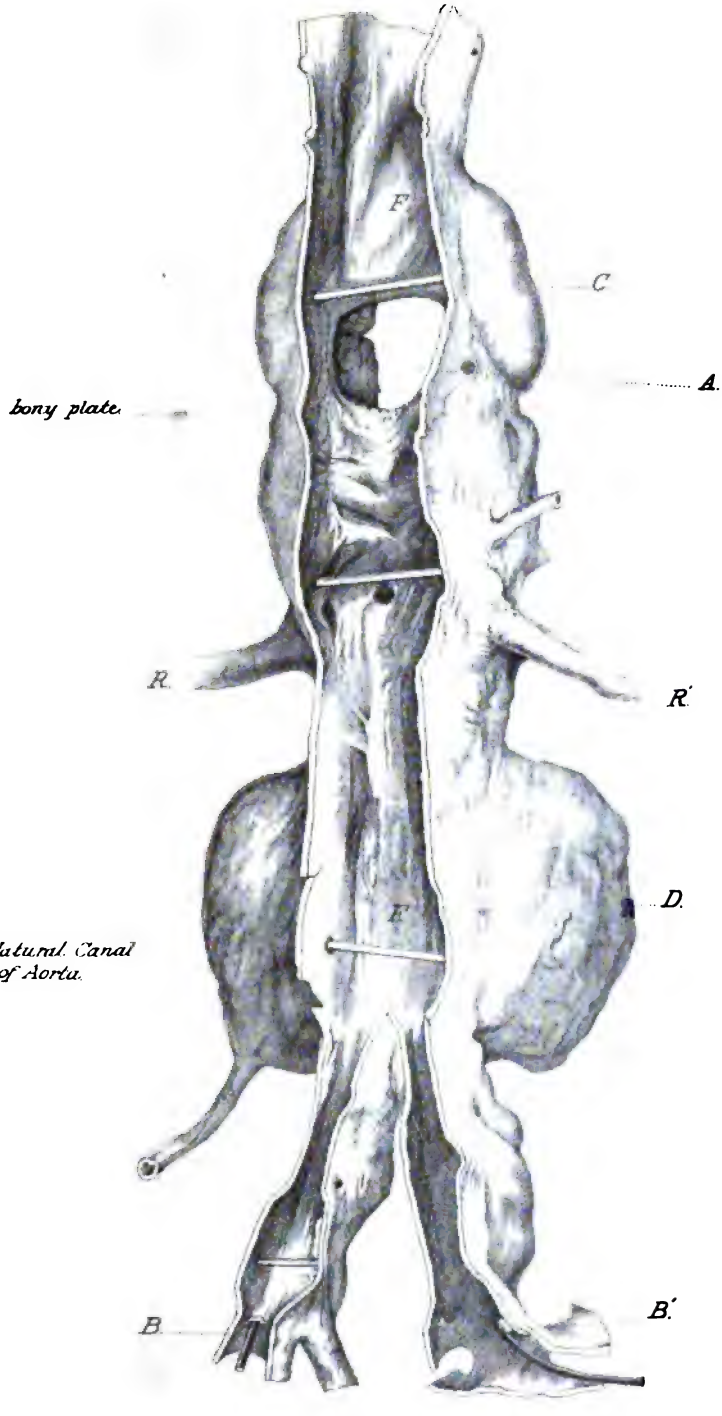
The aorta, throughout its whole length, exhibited a beautiful example of atheromatous changes in its earlier stages—from the small, soft, red, velvety spots to the scabrous, rigid, calcareous patches, though of these latter there were very few. Situated an inch and a half above the diaphragm, a circular opening (*A*) was discovered in the anterior wall of the thoracic aorta; it measured one and a quarter inches in diameter; its edges were sharply defined, the upper was thin and sharp, and the internal coat of the vessel was carried seemingly through it; the lower limit consisted of a bony plate which stretched quite across the calibre of the vessel. This opening led directly to an aneurysm, consisting of the outer and part of the middle coat, and which was the starting-point from which a dissecting aneurysm of the aorta had its commencement. The dissection is both upwards and downwards—upwards for a distance of three inches, where it terminates in a consolidated aneurysm (*C*) ($2\frac{1}{2}$ long × $1\frac{1}{4}$ broad). This sac lay in the posterior mediastinum, where it probably pressed on no important organ. The downward dissection (*G G*) occupies two-thirds of the anterior

and right side of the aorta, and extends throughout its whole course, and also with the greatest symmetry, through both common iliac arteries to their termination (*A B B'*). It thereby produces an appearance as if these three arteries consisted of two tubes. This idea is further impressed by the fact that most of the branches which ought to be given off by the aorta spring from the aneurysmal sac, the only branches from the normal channel being the superior mesenteric, left renal and the lumbar arteries. The inner surface of the aneurysmal sac, which contained a soft clot, is corrugated in parts, but is smooth and as if lined by a membrane in most of its course, and from it the arteries spring as if from the aorta itself. The sac is much larger in calibre than the aorta, which is very much narrowed throughout, while it is so constricted near the upper end of the aneurysm as to barely admit a No. 8 catheter. The iliacs, at their commencement, are also much narrowed. The two tubes communicate at the bifurcation of the iliacs (*B B'*), or rather at the point of junction of the external iliac artery on either side, by one small aperture through the lining membrane on the right side, and by two similar small openings on the left side.

Another, and novel, feature is the aneurysm (*D*) for which the patient came under treatment, and which was the only one which had been recognised during life. On opening the abdomen, it came to view at once, projecting forwards below the cœliac axis. It was very firm to the feel, and, on section, was a beautiful example of a firm, white, organised clot, into which the sac had been converted. Its coverings consisted of the outer coat of the aorta and part of the middle coat, except at its most prominent aspect. It measured five inches in circumference, and was three and three-quarters long by two and a quarter broad. It extended from an inch below the renal arteries to the bifurcation of the aorta into the iliacs, and from its left side were attached the inferior mesenteric and (?) left spermatic. The middle sacral vessel could not be found. Instead, however, of springing from the aorta, or being an aneurysm communicating directly with the interior of the aorta, it was found that it was a sacculated aneurysm springing from the anterior wall of the sac of the dissecting aneurysm already described.

Its cause was not hard to explain; for, although there was an absence of atheroma to act as a factor, it was, doubtless, due to an extra weakening of the middle and external coats in this situation, and while the dissection was going on down the iliacs the anterior wall of the sac gave way in this particular region. That this was its

BACK VIEW



DISSECTING ANEURISM OF AORTA.

formation is strengthened by observing a similar small pouching—sufficient to admit the tip of the index finger—which was beginning in the dissected portion of the right common iliac artery. Again, the unequal distension of false aneurysms is a feature of frequent occurrence. Around this aneurysm, and adherent to it near the spine, were several enlarged and calcified glands. The trunk of the cœliac axis was found to be converted into a solid mass, and, on section, it was seen to have been the seat of a true aneurysm the size of a filbert nut (*E*). It was filled with a firmly adherent white coagulum, which completely filled the aneurysm, and blocked up its two larger branches—viz., the hepatic and the splenic. How the circulation was conveyed to the liver and spleen under such circumstances is a matter of no little interest, and, though not verified by an examination of the vessels—since this aneurysm was only accidently discovered while preparing the larger aneurysms of the aorta—there can be no doubt that the coronary artery became the main conduit, and that, by the anastomosis maintained through the *pyloric* on the right and the *vasa brevia* on the left, the blood travelled in this circuitous route to these organs in sufficient quantity to supply them with nutrition and functional activity.

The kidneys were unaltered in size, but were examples of Bright's disease in the stage of interstitial nephritis. Professor Purser kindly examined sections of one, and found there was considerable increase in the connective tissue.

Remarks.—Dissecting aneurysms were recognised and described considerably before Shekleton's time. To Laennec the credit of priority has generally been accorded, but Dr. Peacock (Trans. Path. Soc., Lond., Vol. VI.), claims it for M. Maunoir, in 1802.

These aneurysms are usually described as of three varieties, or, more correctly speaking, degrees. The first, and that most frequently met with, and of which our museums contain many examples, is where the blood passes through a rupture of the internal coat of the vessel, and for a distance of one or more inches dissects the outer from the middle coat, or else separates the laminæ of the middle coat, and then finally either becomes a secondary false aneurysm in the areolar tissue surrounding the vessel, or else bursts into some of the neighbouring cavities.

When such an aneurysm is situated close to the beginning of the arch of the aorta, it not infrequently is the cause of sudden death, and the sac has been found to have ruptured into the pericardium.

The second, which may in many instances be but the early stage

of the first, is that in which the blood, after making its way between the layers of the middle coat, seems to be arrested in its onward course, and may thus form a false aneurysm of limited extent.

The third, or that of Shekleton, is where, after separating the internal and external coats, or in the layers of the middle coat, the blood re-enters the normal channel through a second rupture of the internal coat. Shekleton describes it thus:—"The aneurysmal sac communicated with its own artery by a distinct opening at some distance from the original opening of the artery into the sac—thus, two channels for the blood into the artery beyond the aneurysm were established, the one through the canal of the artery, as in common aneurysm, the other through the sac."

The specimen I exhibit is an example of both the second and third varieties, for not only is it a beautiful specimen of Shekleton's, but from the aneurysmal sac spring two defined and well-marked aneurysms caused by the yielding of the outer coat.

Dissecting aneurysms are, comparatively speaking, very rare. In the Trans. Path. Soc., London, 1863, Dr. Peacock has tabulated and collected, from various journals, every variety described up to that time from the year 1809, and the total number is but 80. I have carefully searched for additional recorded cases since 1863, in the Trans. Path. Society of London, and I find but 9 cases were presented during twenty-one years; while during the same period in the older Society, the Pathological Society of Dublin, I can find only 5, and in addition a beautiful specimen recorded by Mr. Knott before the Surgical Section of the Academy of Medicine in Ireland, in Dec., 1882 (*Medical Press*, Vol. II., 1882), making the total, up to date, to be 95 dissecting aneurysms of all kinds. The *London Medical Record*, since 1863, gives no additional example, nor has any aid been afforded by consulting Dr. Neale's multifarious "Medical Digest."

I do not presume to say that only 95 cases of dissecting aneurysms have been met with and described during the last eighty years, but the unmistakable fact remains that such cases are of very considerable rarity. In the great majority of instances dissecting aneurysm occurs in the aorta in the first instance, though the separation of the coats of the vessel is not uncommonly carried beyond the aorta into its larger branches, such as the brachio-cephalic and the iliac arteries. The most common seat of origin—namely, the rupture of the internal coat, is close to—one to two inches from—the aortic valves. Of the 95 cases referred to, 79 occurred within the limits of the arch of the aorta. In 11 instances the primary rupture

occurred below the origin of the left subclavian in the descending portion of the arch, while of the thoracic and abdominal portions of the aorta there were found but 6 cases. To this number this specimen adds a seventh.

It is further interesting to observe that of Shekleton's variety there are not more than 9 or 10 on record, while in extent and position there are but 3 or 4 cases which at all closely resemble those described by him. The longest course taken by the blood between the coats of the aorta and of its terminal branches is that in a case recorded by Dr. Swaine (Path. Trans., London, 1856, Vol. VII.), where the blood escaped close to the aortic valves through the internal and middle coats, and separated (dissected) them from the outer coat the whole way down to the right common iliac artery, where it re-entered the normal channel through a small aperture.

Two other and almost identical cases were exhibited at the Pathological Society of Dublin, in 1864—one by Dr. G. R. Symes, and one (by drawing) by Dr. Gordon, to whose kindness I am indebted for this drawing [exhibited], and a third by Mr. Knott, already referred to. In these cases, as in that I now exhibit, the aorta and the iliacs seem as if they consisted of double tubes. In my case the aneurysmal tube is very much the larger, while, owing, doubtless, to this very cause, the original tube is much reduced in size.

The case again seems to be peculiar in its mode of origin and in its symptoms; for, in almost all the recorded cases in which the life-history was known, whether an atheromatous condition of the aorta be mentioned as being present or not, there is a certain moment when symptoms of a decided character occur, such as syncope, breathlessness, pain—often like *angina pectoris*, and from that instant till death a few hours or a few days are the measure of the duration of life. Doubtless the period which elapses between the first symptoms of shock and those after reaction has taken place, and the mode in which death ensues, are alike mainly influenced by not so much the seat of the internal lacerations, and as to whether or not the blood can again re-enter the natural channel, as is the peculiarity of Shekleton's, but as to the way in which the primary opening of the sac occurred. Thus, in nearly every recorded instance the seat of the primary rupture of the internal coat is accurately defined, and the usual description of it is that it is marked by a rent which is either "linear" or "slightly ragged," or

as if "cut with a knife." And in all these cases life was measured by hours, or, at longest, three months (Swaine).

On the other hand, in all the cases which have been accidentally discovered either in the *post mortem* room (as in my case), or in the dissecting room, such as the two by Shekleton and those by Symes and Knott, the aperture which primarily led from the aorta into the sac of the dissecting aneurysm does not conform to the above description, but is large and wide, and bordered by a hard if not calcareous edge.

To the primary formation, therefore, of the dissection, as to whether it be a sudden rent through the internal and middle coats, or a gradual yielding due to atheromatous weakness, we are, I believe, justified in attributing the marked differences in the life-history and its duration in each class of case.

To point this more forcibly, I would note that in my case at no period was there any evidence to signalise the time when the dissecting aneurysm began, to indicate when the extensive separation of the outer coat was proceeding, and when the renal and inferior mesenteric arteries were cut off from the lining membrane of the aorta and communicated with the aneurysmal sac instead, or to show when the internal coat of the iliac arteries was ruptured to allow the blood again to reach its proper canals. This absence of symptoms is, indeed, most remarkable, and is but another instance of the extent to which pathological changes may take place and be unaccompanied by any constitutional disturbance or other symptoms.

I am disposed to consider that in this case, at least, the dissecting aneurysm was consequent upon, and subsequent to, the formation of a small saccular aneurysm of the thoracic aorta, and I would suggest the following as its solution:—

An atheromatous condition of the aorta throughout its whole course was the primary ætiological factor, and caused an hypertrophy of the left ventricle. A couple of inches above the diaphragm there existed a large patch of atheroma which advanced to the stage of calcification. Here, just above this rigid patch, owing to the loss of elasticity, the arterial wall yielded, and a saccular false aneurysm was formed, covered by the outer and either the whole or part of the middle coat—most probably the latter. The lower limit of the mouth (*A*) of this pouch, which measures an inch across, stood out sharp and abrupt, and as at each systole the blood was forcibly driven through the aorta and against this rigid obstacle, the current was divided and part was directed upwards.

The layers of the middle coat were thus more and more separated, and a dissecting aneurysm in an upward direction was produced, and extended along the anterior aspect of the aorta for a distance of two and a half inches (*B*) from the opening ring of the primary saccular aneurysm.

A similar process, and due to similar causes, took place at the same time or subsequently in a downward direction along the anterior two-thirds of the circumference of the aorta, and produced the aneurysm (*A B B*^{1}) which extended with remarkable symmetry into the iliac arteries to their bifurcation.

The specimen has, however, another peculiarity which enhances it with further interest, and I cannot find any other exactly similar case among those published. I refer to the two circumscribed aneurysms which spring from the anterior aspect of the abdominal artery.

The last point to which I would shortly call attention is, perhaps, the most interesting from a therapeutic point of view—and from which pathology must never be divorced—and that is, the complete and firm consolidation of the two sacculated aneurysms which sprang from the sac of the dissecting aneurysm, as well as of the third true aneurysm of the cœliac axis. In each case the sac is filled with a firm, decolorised coagulum of fibrin, which, from its stratified appearance in section, must have been deposited in successive layers, the oldest and most organised being that next the outer wall, the latest and less organised that washed by the blood. In the case of the aneurysm of the cœliac axis there is no channel through the fibrin which completely blocks the vessel.

This is not the place, nor is it my intention, to discuss the general question of the treatment of internal aneurysms, but I now only remark that such specimens of consolidated aneurysms should encourage us still more to carry out the line of treatment with which the name of Mr. Jolliffe Tufnell, F.R.C.S.I., is justly associated, and which is now universally acknowledged to be the most reliable, if not the only, treatment for these aneurysms of internal arteries. For I look upon such treatment as that described in recent journals, of abdominal section, and inserting yards of wire into the sac of an aneurysm, as most unreliable, if not a very questionable proceeding. Many adjuncts doubtless belong to Tufnell's treatment, but its essential principle is to quiet the circulation by rest in the horizontal position (which may have to be maintained from two to four months), so that the fibrin may be

deposited, layer by layer, from without inwards, and when so deposited may become consolidated and organised.

To insure a successful result there must, however, be another condition, on which Mr. Tufnell lays considerable stress. But, unfortunately, it is one which cannot be counted on with any degree of certainty until a trial of the treatment has been systematically made—and that is that the outer wall of the aneurysm must consist of part, at least, of the arterial coverings. Where this vital covering does not exist, coagulation and fibrination do not take place. To the absence of this covering, which receives its independent vital supply, is to be attributed the failure of the treatment in those aneurysms which, springing from the back or side of the abdominal aorta, cause absorption and destruction of the arterial walls by their growth and pressure against the vertebral column or the ribs, and where consequently these structures (which are themselves continuously undergoing retrograde metamorphosis and absorption) form the posterior limit to the aneurysmal sac.

ART. XIII.—*On the Necessity of an International Pharmacopœia, considered from the Point of View of the Medical Profession.*[a] By F. J. B. QUINLAN, M.D., Dubl.; Professor of Materia Medica and Therapeutics, Catholic University Medical College; an Examiner in the same, and in the Royal University of Ireland.

UP to about a quarter of a century ago we had in the United Kingdom of Great Britain and Ireland no less than three distinct and perfectly independent pharmacopœias—those of London, of Dublin, and of Edinburgh; and many inconveniences and occasionally dangers resulted therefrom, although the differences in the strengths of many of the more active preparations were not as pronounced as may now be found in those of the different European Pharmacopœias of the present day. Many of our most distinguished physicians had recommended the incorporation of our three pharmacopœias; but local prejudices or mistaken national sentiments prevented this fusion, and it is possible that the anomaly might have continued to the present had not the sharp sword of an Act of our Imperial Parliament cut this Gordian knot by ordaining the preparation of one uniform pharmacopœia for the United Kingdom of

[a] This is a translation of an Address delivered in French in the Palais des Académies, Brussels, before the International Pharmaceutical Congress, on the 1st of September, 1885.

Great Britain and Ireland, along with the colonies and dependencies thereof. This great work was accomplished by the representatives of our three kingdoms, and soon every one asked why it had not been always so? The Irish or Scottish physician who entered into our military or naval medical services was no longer obliged to study a new pharmacopœia; and, correspondingly, the Englishman who travelled in Ireland or Scotland, carrying with him some favourite prescription, was no longer uneasy lest its compounding might be interfered with by some divergence in the local pharmacopœia. Up to this time in reading one of our medical works it was usually advisable to consider in which of the three pharmacopœias each prescription was written, but even this inconvenience was now removed, and ever since complete pharmaceutical unity has reigned throughout the great section of the human race which reposes beneath the shadow of the British flag. We have at home our political differences, and many persons especially in Ireland are in favour of local domestic legislation, but not even the most extreme advocates of this view would wish to restore the Dublin pharmacopœia, or to interfere with the pharmaceutical unity of our English speaking race. In fact, our young physicians do not remember the existence of our three local pharmacopœias, and the seniors now perceive that they were in every way inferior to our present uniformity.

I do not propose to-day to urge the abstract advantages of an universal pharmacopœia for the civilised world. That proposal was first formulated at the International Pharmaceutical Congress, held at Brunswick in 1865, as is now, I believe, generally admitted. Neither do I propose to make suggestions as to the best method of carrying out the details of a work which has occupied the attention of every succeeding Congress, and which has been most ably and exhaustively treated in the three reports of Professor Norbert Gille, of this city (Brussels). And I am aware, moreover, that Herr Von Waldheim, of Vienna, will lay before us to-day a specimen section[a] of the proposed International Pharmacopœia. I will merely say that I am of opinion that the universal pharmacopœia ought to be in the Latin language; that the metric system of weights and measures ought to be employed; and that the heat scale adopted should be

[a] This specimen section was distributed among the members of the Congress. It was very beautifully printed in the Latin language, and gave the component parts of every preparation, with directions for making them up. The difficulty of weights was got over by multiple proportions on a decimal scale. It did not give doses.

that of Celsius (centigrade). I am further of opinion that the new pharmacopœia should aim merely at establishing everywhere uniform pharmaceutical preparations, and should not enter into the question of doses, as is done in some local pharmacopœias. In the first place, the dose of any medicine is a matter entirely within the discretion of the physician; and in the second, the doses of many medicines vary in different climates. To select a familiar example—Oriental nations use hardly any alcohol, and the Spaniards and Italians use it in the form of very light natural wines. In Great Britain and in Northern France and Germany fortified wines or distilled spirits are more in favour; while in Russia and in Scandinavia ardent spirits are almost exclusively employed, and to an extent startling to the British visitor. In India great doses of calomel are used in hepatic cases; and in malarial districts the doses of quinine are extraordinary to foreign physicians accustomed to use the drug simply as a tonic. For these reasons I am of opinion that the new pharmacopœia should not enter into the question of the doses of medicines.

I propose, on the present occasion, to consider the question from the point of view of the medical profession, and to show that either we must have an International Pharmacopœia, or that a department of the medical art of the most useful and progressive character—that is to say, experimental therapeutics—cannot be thoroughly cultivated, and for the good reason that the medical profession of Europe cannot pursue it in unison without pharmaceutical uniformity. The system of international intercommunication which has for many years past prevailed throughout the medical profession of the whole civilised world is rapidly welding the medical art into one complete and uniform whole; and the continued existence of a number of local pharmacopœias presents an anomaly and a difficulty which the civilised world will not allow to continue. Many energetic pharmaceutical chemists have endeavoured to overcome this difficulty, and I have myself seen in the splendid establishment of the late Cavaliere Sinimbeighi, in Rome, effective arrangements for the compounding of prescriptions according to almost every European method. Something of the same kind is to be found here (Brussels), in London, and, in fact, in all the principal cities of Europe; but, with these exceptions, there is incertitude, and, perhaps, risk, whenever a foreign prescription is encountered. Can anyone for a moment assert that any benefit to science or to suffering humanity results from this pharmaceutical diversity? Most certainly not.

It may be asserted, however, that although this diversity of

many local pharmacopœias is a source of perplexity, it is not likely to result in danger; it will be easy, however, to prove the exact contrary. If we take as a standard of unity the quantity of opium contained in the laudanum of the British Pharmacopœia we find twice as much in the corresponding preparations of France and of Greece, and half as much in that of Portugal; and if we cross the frontier of the latter country and enter Spain, we at once meet with a laudanum of British strength. The tinctures of nux vomica of Germany, of Russia, and of Scandinavia are stronger than that of Great Britain, twice as strong as those of France and of Southern Europe, and three times as strong as that of the United States of America. In the preparations of iodine, of digitalis, of aconite, of prussic acid, and of many other potent remedies, we find the most serious differences; and finally, in the tincture of cantharides we discern a scale ranging from one part of cantharides to five of alcohol in Austria to one in eighty in England.

Such examples could be easily multiplied but it is unnecessary to do so in the presence of an audience so versed in the subject. Anyone who reads foreign medical literature will find himself every day confronted with the pharmacopœial difficulty. As long as you are occupied with symptoms, diagnosis, or surgical treatment you are in perfect accord with the foreign author; but when a foreign prescription is encountered the reader is like a ship without rudder or compass. He moves on amid clouds and obscurity, and is fortunate if he be not led into danger. For this reason, works of an international character seldom enter into prescriptive details. They say such and such remedies were employed, but the exact *modus agendi* is usually left to the discretion of the reader to determine according to the pharmacopœia with which he may be familiar. Many important remedies are used in their simple native condition, but even here we are baffled by the diversity of the weights and measures employed in different countries. Thirty-two grammes (an ounce) of magnesium sulphate dissolved in ninety-six grammes (three ounces) of water will produce exactly the same effect upon the Russian or upon the Turk, upon the Briton or upon the Arab; the British pharmacien, however, even in this simple prescription, is baffled by the grammes, and his foreign colleague by the ounces.

These Congresses have already indicated the general lines upon which this great work ought to be accomplished; and I believe that we ought now to address ourselves, as a Congress, to the Government of His Majesty the King of the Belgians, pointing

out the immediate necessity of general pharmaceutical uniformity in these days of international intercommunication; and that the representatives of each nation here present ought, on returning, to address their own Governments. One word more before concluding. The new pharmacopœia ought to be complete; no partial pharmacopœia of powerful remedies would prove satisfactory. A strong and combined effort will bring to a successful termination a great work, which science, common sense, and convenience alike loudly demand; and, at the beginning of the next century, the older physicians will reflect with astonishment that the civilised world tolerated the existence of a number of divergent local pharmacopœias, and their younger colleagues will understand only the Pharmacopée Internationale.

Art. XIV.—*Experimental Researches upon Tuberculosis and Scrofula.* By Edwin Wooton.

Into the consideration of the common phenomena of Tuberculosis and Scrofula I need not enter—they are or should be known to every medical man and student.

To determine, if possible, the nature and ætiology of these diseases I, when a clinical student, made such observations as lay within the scope of my practice—not studying here a little and there a little, but selecting particular because promising cases, and following them from the earliest opportunity until the incidence of recovery or death.

The conclusions, however, at which I was enabled to arrive were unsatisfactory, because in the human subject I could submit them to no real test whether within or outside the hospital. It is true that theories could be formed, deductions made, and inductions followed, but the data were not in themselves sufficiently assured to permit of perfect reliance being placed on any course of reasoning based thereon.

Impressed with these convictions I, some time since, began the study of experimental phenomena in the brute world in relation with tuberculosis and other major diseases, and have continued it until the time of writing. It is a pursuit full of difficulties—legal, social, and scientific. The investigator is hampered by absurd anti-vivisection laws, to evade and defy which is his simple duty; and he is annoyed by the sentimentalism of weak-minded neigh-

bours or acquaintances who may become aware that he is engaged in research, and who regard him as a nineteenth century "six hundred threescore and six." These are all, perhaps, of which he has a right to complain. Difficulties purely scientific in their character he must expect to encounter at every step of his journey; and they exist but to be taken prisoners and made to reveal the secrets of Nature's kingdom.

I have thought it well to place the results of my investigations in the form of question and answer. Each question is as I propounded it before commencing the experiment or experiments having reference to it. This plan will enable the reader to refer in a moment to any point he may wish to consider. The summing-up has been written in the ordinary manner to form an unbroken chain of argument.

The microscopic powers used in the following experiments were the $\frac{1}{8}$, $\frac{1}{10}$, and $\frac{1}{16}$ inch. The antiseptics were hydrogen peroxide, pure glycerine, carbolic acid, and permanganate of potassium, these three last being placed with one, forty, and sixteen parts of distilled water respectively.

I wish to point out that stained specimens of septic fluids and tissues are not to be depended on as exhibiting the forms to be found in the fresh state. The process of washing after staining, which has to be performed in order to get rid of excess of dye, removes also many of the forms. All observations conducted by means of such stained and washed specimens, if unsupported by evidence based on the examination of fresh materials, must be considered as fallacious.

With regard to the means used for inoculating animals, I find nothing simpler or better than the following:—Take a piece of ordinary glass tubing, about five centimetres in diameter and one decimetre in length; bring one end of this to a fine point by heating; with a piece of iron wire, some cotton wool and fine silk, a piston can easily be made; when this is inserted into the tube the experimentist has, at a nominal cost, an injector which can be used both for the tissues and vessels. The cheapness of the materials enables the economical worker to have three or four dozen of the instruments on hand. When once used they can be taken to pieces, the cotton wool burnt, and the glass and wire subjected to a red heat before being again made serviceable. To inject materials by blowing them out of a glass pipette is to invite failure, where the presence in the fluid of a living form from the mucous membrane of the mouth

would negative the value of the experiment; and no such researches carried out by this means can be for one moment considered as reliable.

TUBERCULOSIS.

Question 1.—Does pus from tuberculous organs exhibit any independent forms of life?—In pulmonary pus recently coughed up no forms of life are detectable, if it be not fœtid. If kept, it undergoes the same septic changes as other animal matters. Pus taken from mesenteric ulcerations is, under similar conditions, also lifeless. But when abscesses exist, having a communication with the atmosphere, through the bronchi or intestines, the pus is frequently retained for some time after formation, and will then be found swarming with septic matters. In all such cases the pus is fœtid. The nature of the forms found is dependent on the length of time during which the pus has been exposed to atmospheric influence. They consist, when at its highest state of development, of micrococci, microbacteria, desmobacteria, vibriones, and spirobacteria. I use these terms because they are generally understood, but I am by no means satisfied with the ordinary classification of the bacteria.

Question 2.—Do these forms undergo any change when the pus has been taken from the body?—Yes; but the nature of these changes will depend on the conditions. If the pus, whatever its state of septicism, is placed in a closely-sealed bottle, and kept for some weeks, it will be found rich in the living forms already mentioned. These are continually perishing and giving origin to fresh generations. In closed bottles there is no development above bacteria. If, on the other hand, the pus, either in sufficient quantity to prevent complete evaporation, or mixed with distilled water, be kept in an uncorked bottle, in the open air, true infusoria will, in the space of a few days, make their appearance.

Question 3.—Is there detectable by the microscope, in tubercular pus, any form of life peculiar to itself?—No. The forms are those found in all septic matters, and present no peculiarities.

Question 4.—What are the septic phenomena and conditions of tubercle itself?—Merely those of other animal matters.

Question 5.—Does the blood of tuberculous animals exhibit any microscopic peculiarity?—There is always an excess of white, and a diminished number of red corpuscles.

Question 6.—Are septic matters to be found in the blood?—They are to be seen when there exists in the animal a purulent

tissue exposed to the influence of the atmosphere, and only in such case.

Question 7.—Are the contents of any particular classes of blood-vessels more especially affected?—Kill the animal by piercing the brain. Open the thorax, place a ligature round the roots of the lungs, and another round the aorta. A portion of the contents of the vessels can then be drawn off with a hypodermic syringe. The septic matters will be found chiefly in the small veins proceeding from the part; next in the smallest arterioles, and to a very limited extent throughout the larger vessels.

Question 8.—Are they to be found in the lymphatics?—The lymphatic vessels should be dissected out in their passage along the bronchi and ligatured with silk, at short intervals. Septic matters will be found in abundance in the vessels near the part affected, diminishing in relative number with their distance from this part. Traces can also be detected in the fluid expressed from the bronchial glands in connection with the lymphatics concerned.

Question 9.—What forms of life are these?—Micrococci, micro-bacteria, and bacilli, throughout the vascular and lymphatic systems. Vibriones and spirobacteria may occasionally be seen in the small vessels, adjacent to the putrescence. They are not to be found in the large veins, arteries or lymphatic trunks. Torulæ are altogether absent.

Question 10.—Do these bacteria multiply within the blood and lymph?—In tubercular and pneumonic phthisis, when the septic condition has become established, and antiseptics, as vaporised carbolic acid solution, are employed by inhalation to prevent germination in the pulmonary tissues, the bacteria found in the blood and lymph diminish in number in proportion to the stringency of the antiseptic conditions; and if the last be maintained thoroughly, for even a few hours, the septic matters altogether disappear. That this is not due to an antiseptic condition of the blood and lymph, is shown by the fact that if in any such animal a wound be made in one of the extremities, and rendered putrescent by continued irritation, the living forms mentioned occur in the vascular and lymphatic systems, although antiseptics are used for the pulmonary lesion. They are most numerous at the point of lesion, in the same manner as when the lung is concerned.

The presence of septic matters in the blood and lymph is due to their constant reception under putrescence of the tissues.

Question 11.—What are the blood and local-tissue peculiarities

of hectic fever ?—Those always occurring, in a more or less marked degree, when a putrescent lesion has been established.

Question 12.—Can hectic fever be induced ?—If any highly vascular organ, as the lung, kidney or testicle, be wounded and allowed to become putrescent, by being kept open and irritated, from time to time, with a blunt, pointed instrument, a fever follows, undistinguishable from that known as "hectic."

Question 13.—What effects follow the application of antiseptics to the putrescent surface ?—The antiseptics should be applied by external dressings and direct inspection—in the case of the lungs by inhalation also. The first observable result in the living animal, after the expiration of some thirty minutes, is an abatement in the intensity of the febrile symptoms. If the animal be now killed, the septic bodies will be found in comparatively insignificant numbers, both in the tissues and blood and lymph vessels.

Question 14.—Has the blood of hectic animals infectious properties?—If drawn from the seat of the morbid processes, and injected into blood-vessels of another animal, symptoms of hectic result, but these pass off rapidly, unless the wound made by injection itself become putrescent. If the blood be taken from a vessel far distant from the lesion, no morbid results will follow its injection.

Question 15.—Has tubercle or tubercular pus any infectious properties ?—If these matters are placed in cotton wool, being well worked into its substance, and this is passed as a respirator over an animal's mouth, negative results follow. If the lung be first wounded, and the respirator applied when, or kept on until the tubercular matter is putrescent, hectic and exudation ensue.*

Question 16.—Of what character is the exuded material, and in what part of the lung is it found ?—It is of an almost watery consistence, colourless, and is found in the neighbourhood of the wound, diminishing in an outwardly increasing circle. It resembles exactly the fluid that can be expressed from the ordinary caseous tubercle, found in the human subject, and, like the latter, contains leucocytes.

Question 17.—What effect is produced on the lungs by the respirator, if the blood-vessels be ruptured by coughing ?—If irritants, as fine snuff or pepper, be passed through a tube, into the animal's lungs, until the rupture of one or more vessels is indicated by the blood coughed up—septic and inflammatory results follow.

* The exudation is altogether more marked than that resulting from a wound only.

The severity of these processes will depend on the extent of the lesion.

Question 18.—Can tubercle of any organ be brought about by direct local inoculation?—Non-putrescent tubercular matter, injected into a small trochar wound in the lung or kidney, does not occasion any symptoms beyond those of common inflammation. Neither does the injection of pus. If putrescent, either will cause violent septic symptoms, and the formation of abscesses in various organs, notably the spleen. The fluid-deposit mentioned is always present in one or more organs, and in some cases may be found infiltrating large areas of tissue.

Question 19.—Do the same symptoms follow the injection of septic matters, not tuberculous?—Yes; certain animal matters, as urine, and muscle and blood serum. Vegetable infusions and juices, unless they are, in the first place, poisonous, are not productive of such severe results.

Question 20.—What results follow the injection of tubercular matter from a human subject into the blood of a quadruped?—If non-putrescent, only negative results ensue. If putrescent, only the symptoms following the injection of other septics.

Question 21.—What results follow the injection of putrescent tubercular matter into lymphatics?—Non-septic miliary and caseous tubercle give negative results. Putrescent miliary tubercle gives rise chiefly to septic and pyæmic symptoms and swelling of lymphatics. Exactly the same results follow the use of other septics. Putrescent caseous tubercle, and the liquid expressed from it, occasion great swelling of lymphatics and a fluid deposit in one or more organs. In one case, where half a drachm by weight of the caseous material was injected into the thoracic duct of a kitten, there ensued, besides the pyæmia, great splenic inflammation and a deposition of fluid in the mesenteric glands, the lungs, and the kidneys.

Question 22.—Will any other septic matters give this result?—Yes, all; and even non-septic irritants as powdered iron in water, but not to the same extent. There are only two septic matters other than caseous tubercle I have found equal it in intensity of effect, and these are—the expressed fluid from this tubercle and putrescent lymph.

Question 23.—Will this putrescent lymph affect the lungs through the respirator?—Yes, in the same manner as other animal septics.

Question 24.—Can the formation of tubercle be shown under the

microscope? Yes, and in the following manner:—First, kill a frog; open the abdomen, and inject the large lymphatic vessels, proceeding upwards from one of the hind legs, with pigment, after drawing off the lymph. This will give an accurate notion of the anatomy of the lymphatics, as they can on dissection be easily seen, and the preparation will serve as a model. Now, take another frog, and sever the lymphatics of the leg about the middle of the femur. Tie both extremities as cut; dress the wound, and place the animal in as easy a position as possible, with its foot under the microscope. Be careful not to irritate the foot. The frog, if it does not prove altogether unreasonable and die, may be kept in this position for some days, being fed with gnats, flies and other such luxuries.

Nothing abnormal will be observable at first, but after a few hours the lymphatics will be seen to enlarge, and the lymph spaces to be filling with a semi-opaque material. Then the capillaries diminish in calibre, due to the pressure on their walls of the newly-seen material. If the frog be killed at this stage, and the foot dissected, the material previously seen under the microscope will be found to resemble common miliary tubercle, but it has no stroma. If the experiment be performed again, it will be found that after the formation of tubercle has been well established, the small blood-vessels appear irritated and exude—first, leucocytes, and next, serum, as in ordinary inflammation. Any uncut lymphatics are similarly affected.

The immediate result is cell proliferation in and about the tubercle, resulting in the formation of a stroma. If now the frog be removed, and every means taken to allay the inflammation, we shall find, on dissection, a perfect example of stromad miliary tubercle. The experiment may be repeated the third time, to show the effect on this tubercle of the lympho-vascular inflammation. Briefly, it results in the softening of the mass, which softening, if the blood-vessels are completely occluded by the inflammatory processes, may become purulent.[a]

An interesting physiological fact may now be noticed. If the lymphatics of the leg be cut and tied as before, and inflammation brought about by irritation, the exuded fluid will, when such irritation has ceased, lessen in quantity, while the capillaries and

[a] The statement put forward by a Dr. Alabone that tubercular matter is at the first albuminous, is, I have found, utterly erroneous. Tubercular matter never gives the reaction of albumen. Its albuminoid constituents do not, from the commencement, reach a higher percentage than those found in lymph.

small veins enlarge. At the same time the leucocytes, for the major part, appear to undergo disintegration, while some few pass into the interior of the blood-vessels. There is, then, a re-absorption by the blood-vessels, which, to some extent, act vicariously for the lymphatics.

Question 25.—What morbid results follow the injection of the freshly-drawn blood of a tuberculous animal, in whom no septic symptoms exist, into the veins of another?—The only important result in the animal receiving the blood is its apparent strengthening. I have used from half an ounce to two ounces without any other effect, save the phenomena always following increased blood-pressure.

Neither tuberculous nor any other morbid symptoms made their appearance in any of the animals I had an opportunity of keeping under observation, and on killing them at the expiration of six months from the date of the experiments, the lungs were found perfectly healthy.

Question 26.—Can tuberculosis be induced by mechanically irritating any organ or part of the body?—In the case of the lungs, a cotton wool respirator should be employed, its meshes being filled with irritant powders, as steel and coal-dust. The process must be very carefully carried on, the respirator being removed at the slightest sign of acute inflammation, and for a time discontinued. It should be worn by the animal at all times, save for about ten minutes twice daily, a period sufficient for it, in which to take its food. The condition can be developed in other parts by prolonged irritation of the lymphatic glands, as by piercing them daily with a fine needle, or passing through them a seton of silk.

Question 27.—What is the immediate local result of such irritation?—First, enlargement of the lymphatic glands. The blood-vessels entering them are engorged, and the channels in the gland tissue are nearly occluded with a mass of sluggishly-moving lymph corpuscles. Next, the lymphatics on the proximal side of the glands become congested; and lastly, the lymph exudes into the surrounding tissues.

Question 28.—What is the character of this lymph?—It is undistinguishable from that found inside the vessels, and closely resembles the fluid that may be expressed from caseous tubercle. The latter, however, is rather more opaque, due to containing cellular *débris*. This cellular matter can be removed by filtration under atmospheric pressure, and the fluids are then undistinguish-

able from each other. *There exists, in fact, a condition hitherto unrecognised—a true lymphatic inflammation. Side by side with this, vascular inflammation may obtain.*

Question 29.—How can lymphatic inflammation be shown during life?—Fasten a frog under the microscope, as when the phenomena of common vascular inflammation are to be viewed. Sever the blood-vessels in the animal's thigh, carefully ligaturing the proximal extremity of each. Leave the nerves, as far as can be, intact. Then insert the needle of a hypodermic syringe into the cut mouth of each open vessel in turn and draw out the contained blood. Next, inject the veins and arteries with pigment. If now the frog's foot be irritated with a needle, the lymph containing the corpuscles will be seen passing from the lymphatic vessels into the surrounding tissues.

Question 30.—Are the intestinal secretions acid in tuberculosis?—No. If an animal, as a cat, in whom general tuberculosis has been set up, be killed, the intestines cut open, washed and then scraped, the material collected is generally neutral, and not infrequently alkalial. If such an animal be kept without food for some days, and the intestinal contents gathered by scraping only, they are but slightly acid. This acidity is due to the bile; for if the bile ducts be tied and the animal kept without food for twenty-four hours the intestinal contents are invariably neutral. The ordinary intestinal contents of any tuberculous animal kept on its usual dietary are always acid. The acidity is marked in carnivora, as cats, and but slight in the vegetable-feeding rodents. In the carnivora the acidity is in direct proportion to the amount of fat eaten. It is due to the fatty matters of the food being in great part unabsorbed and split up into fatty acids.

Question 31.—Is there more or less bile in tuberculosis?—If the common bile duct of a cat be tied, the gall bladder opened and the edges of the incision stitched to those of the external wound, the quantity of bile secreted can be readily estimated. There is always a lessened amount in general tuberculosis. For whereas in health a full-grown cat will have from three to five ounces sent daily into the intestine, with the establishment of the tubercular condition this amount lessens, and that progressively until in many cases only about half an ounce is formed. But if a large extent of lung-tissue be destroyed, the amount of bile will increase, owing to the vicarious action of the liver in excreting carbon.

Question 32.—Is there more or less pancreatic secretion in tuberculosis than in health?—Less, but the diminution in quantity

is comparatively not so marked as in the case of the bile. The question is determined in a manner similar to that relating to the bile: the duct of the pancreas being tied, and cut between the ligature and the gland, the open end of the untied portion is then stitched to the edges of the outer wound, establishing a fistula.

Question 33.—Can pneumonic pulmonary phthisis be brought about in a healthy animal by thermal changes alone?—Yes, if the surface of the thorax be suddenly and severely chilled when hot, and particularly when the heart's action is strong; or if the chest, under any circumstances, be exposed to intense cold, the lung capillaries become engorged, and inflammation, followed by various secondary processes, as the blocking of the bronchi through mucous clots, and consequent collapse of pulmonary cells, will result if the morbid processes are not subdued. But in all cases the exuded material, by pressing on the blood-vessels, cuts off the vascular supply, and the resulting innutrition of the tissues terminates in their disintegration—phthisis. Moisture has no influence whatever other than thermal.

Question 34.—Does lymphatic inflammation play any part in these pathological processes?—It does, but secondarily; for thermal changes do not readily affect the lymphatics. The exuded vascular material, however, itself acts as an irritant to the lymph vessels, resulting in the passage through the walls of their contents.

Question 35.—Can miliary tubercle result in a previously healthy animal under this condition?—If pulmonary inflammation be set up in a number of animals, as kittens, and allowed to proceed, and the animals killed at various stages of the disease, the lympho-vascular fluid will be found to become more dense in proportion to the time the inflammatory condition has been established. At the last it is of a creamy consistence and contains granular *débris;* but surrounding and pressing on the interstitial spaces in which these pathological changes are to be seen, in places where the blood supply has not been cut off, there will be found a material altogether foreign to that which has been exuded, and which is evidently nothing but the unabsorbed cellular *débris* of the normal tissue. In cases where the inflammation has been allowed to run on for some time, and absorption then brought until the disappearance of every inflammatory sign, these areas of *débris* accumulation are plainly observable, the fluid being absent. They are, in fact, nothing but masses of miliary tubercle. If such an inflammation be induced, and subdued and again induced, the miliary tubercle will be seen

mingled with exuded fluid, under whose influence in various stages the tubercle is becoming softened.

If the inflammation be subdued and the animal kept for some days under circumstances which preclude the possibility of there being any extra-corporeal exciting causes of the inflammatory state, there will be found scattered masses of miliary tubercle, and the number and size of these tuberculous loci decreases in proportion to the time the animal has been kept alive subsequent to the subdual of the inflammation.

Question 36.—Can miliary tubercle be brought about without any previous exudation?—Yes; if cats be kept in a condition of semi-starvation for from three to five weeks, and in the interim the lymphatic system is exhausted, as it easily can be by the administration of iodine—if by inunction, 4½ grs.; if by inhalation, 1½ grs.; and if internally, ½ gr. respectively, five times daily, the lungs, kidneys, and sometimes other organs will show variously-sized patches of tubercle.

The food should be comparatively dry. In the case of cats, one ounce of broken biscuit with half an ounce of water may be given daily.

Animals merely starved to death do not exhibit these *post-mortem* signs.

The condition, however, may be rapidly brought about by complete starvation and the administration of iodine in excessive but not acutely poisonous doses.

When the iodine is given internally the mesentery is more especially affected; when by inhalation, the lungs. Inunction on the thorax and abdomen affects the organs mentioned situated in these respective parts. Inunction on the extremities results in general tuberculosis of a less marked character.

Question 37.—In chronic cases of inflammatory phthisis before the formation of tubercle, are the powers of secretion and absorption impaired?—Yes; there is lessened bile and pancreatic secretion, and decreased absorption.

Question 38.—In cases where pulmonary tuberculosis has been induced through thermal conditions, is tubercular matter to be found in other organs?—It is detectable only when the pulmonary condition has been very chronic and the system altogether enfeebled. Then also it is very easily induced by exposing the body to heat and cold alternately.

Question 39.—Is tuberculosis hereditary?—If local tuberculosis

be induced in an animal, tubercular complaints are more easily developed in its young born after the incidence of the disease in the parent, than in other animals derived from a healthy stock. More especially is this the case if there has been general lymphatic irritation induced mechanically or by injection of septic matters into lymph vessels.

If the tuberculous condition be brought about in the young mentioned when of sufficient age to breed, their own offspring will, under exciting conditions, pass more readily into the tuberculous state than they themselves. It is, of course, understood that all three generations have brought to bear on them the same influences.

Question 40.—What follows the contact of tubercular matter with an open wound in the extremities?—If not septic nothing whatever ensues. If septic the immediate result is very circumscribed vasculo-lymphatic inflammation. Then the lymphatic glands and larger vessels become congested, and there is extensive lymphatic exudation. This spread of the lymphatic inflammation always precedes that which is purely vascular. The latter, indeed, very frequently does not take place; should it do so the condition known as erysipelas is established. If the septic conditions be maintained pyæmia follows. From no such wound have I ever seen general tuberculosis ensue. In fact, the limb perishes from gangrene or sloughing before anything approaching such a result is obtained. At the same time such animals are more readily affected with general tuberculosis under exciting conditions than others.

The results given follow, to some extent, the contact of all septic matters, but there appears to be a more powerful influence exerted on the lymphatics by putrescent lymph or tubercular matter than by other septics.

If the wound be in the neighbourhood of a lymphatic gland of any size, and be cleaned daily, but the septic condition kept up to induce a state of chronic inflammation, there results general lymphatic irritation, together with lymphatic inflammation in distant organs.

Question 41.—Has miliary tubercle always the same structure?—No; at first it does not show any proper stroma at all. The latter develops with the age of the nodules, and is sometimes, even in old cases, almost absent. It is undoubtedly a growth due to leucocytic metamorphosis. In many spots of tubercle the leucocytes can be seen in the line of the stroma—some normal, others throwing out branched processes. They extend their way between the cells of

the tubercle, and unite, losing their distinguishing characters, until they form a network of apparently structureless tissue.

Question 42.—In what organs of the animal's body is tubercular matter, as commonly understood, found?—In the peritoneum, lungs, pia mater and the arteries in connection therewith, spleen, liver, and kidneys.

Question 43.—Is any other kind of heterogeneous matter to be observed in other organs?—Yes; specks and nodules of abnormal structure are frequently to be found in the pericardium, or the membrane covering the valves of the heart, and in the walls of the bladder.

Question 44.—Have the organs and parts commonly affected with tuberculosis any structural points in common?—They are all highly vascular, and largely supplied with lymphatics. Where not actually serous membranes they are intimately connected with such. They are, moreover, membranous to a greater or less extent—that is, they are either composed of membrane or have continued into their interior, membranous processes derived from the external investing layer, and which is in intimate connection with the serous covering.

Question 45.—Apart from tubercle itself and vasculo-lymphatic inflammation, has the tuberculous condition any general effect on the tissues?—Yes; there is a degenerative atrophy throughout the whole body, the tissue cells being weak, and the structure into which they enter lessened in bulk and atonic.

Such are the experiments I have performed to elucidate, if possible, the nature of this dread condition, and such are the results I have obtained. Let us now briefly reconsider the main questions at issue, the evidence relating thereto, and the conclusions to which this points.

Tuberculosis is the name applied to a condition which we have found has invariably two factors—vasculo-lymphatic exudation, and non-removal of effete cellular material. The vascular process is commonly termed inflammation; there is also an inflammation truly lymphatic in its nature.

Tuberculosis may commence in one of two ways—either by peripheral irritation, as under certain thermal conditions; the inhalation of dust, &c., in which case the first step is exudation, and the second, through the occlusion of the lymphatics, the non-removal of effete tissue; or by inactivity of the lymphatic system when the exudation follows as a secondary process.

This secondary process is a vasculo-lymphatic inflammation caused by the irritation set up by the non-removal of cellular material.

This tissue *débris* forms miliary tubercle. The stroma is produced by the proliferation of exuded leucocytes and lymph corpuscles. The metamorphosis of the miliary into caseous tubercle is due to softening under the influence of the exudation. A vasculo-lymphatic exudation and the non-removal of cellular *débris* may occur in any part of the body, the peculiar appearance of the commonly-termed miliary tubercle being due probably to the character of the tissue concerned.

Tuberculosis affects certain organs and structures more readily than others—these are the peritoneum, lungs, pia mater and the vessels in connection therewith, kidneys, spleen, and testicles; and it is in these alone that I had ever found miliary tubercle.

Tuberculosis is essentially a lymphatic disease. There is lessened power of absorption throughout the system. Fatty matters are not taken up by the intestinal vessels as in health, but are for the major part split up into fatty acids,[a] and this results in lessened bile secretion, which in its turn causes increased impoverishment of the system through the non-emulsifying of solid fat eaten. When any extent of lung tissue is destroyed, the amount of bile is increased, and necessarily, chiefly at the expense of elements which, excepting the carbon, are required in the system.

As the morbid condition progresses the other secretions lessen, among them being the pancreatic fluid; and this, impairing as it does still further the process of saponification of fat, still further lessens its absorption.

In tuberculosis the lymphatic glands are weak, liable to congestion, and do not elaborate the white corpuscles. As a result, the blood is filled with a number of immature white cells, which are not elaborated into red corpuscles.

Inflammation can never occur without involving the lymphatics, and in all inflammation the white corpuscles of the blood are increased and the red lessened in number.

Any prolonged or severe irritation to the lymphatics may bring about tuberculosis, throw the glands and nerves supplying them

[a] Fat does not normally split up into glycerine and fatty acids until acted on by the pancreatic secretion, when saponification *immediately* takes place. In the abnormal chemical disintegration of fat the acids themselves decompose after liberation. In such case they are in great part wasted. The saponified fats also, when not absorbed, break up, and it is to this action the peculiar acidity of the intestinal contents in tuberculosis is chiefly due.

into disorder, as indicated by pain and swelling—in fact, result in lymphatic inflammation. An example of this last is to be seen in cellulitis.

Whenever a part exposed to the atmosphere has broken down, vivification of germs takes place; these multiply at the point of lesion only, passing thence into the blood. There is not any form of life detectable by the microscope peculiar to tubercular blood, pus, lymph, lymphatic exuded fluid, or serum.

The influence exerted by septic matters from any tuberculous animal, when injected into the body of another, is the same in kind as that appertaining to a variety of septics not tuberculous. At the same time putrescent matters derived from the lymphatics are more powerful in action than any other septics.

It is probable that this is due to some affinity between the non-septic lymph and its septic derivatives. This increased influence, however, is seen only when the matters are injected into the lymphatics, or have other ready access thereto. In the blood their intensity of action does not differ from that of many other septics.

The hectic fever of phthisis is due altogether to the development of living forms in the lung tissue. It may be prevented and cured by the use of antiseptics, and may be induced by injecting into the blood-vessels or lymphatics any septic matters.

Quitting now the direct results of my experimental work, let us briefly consider some of the more prominent pathological facts and questions, other than those dealt with, having relation to the condition of pulmonary tuberculosis. When death occurs as a result of pulmonary phthisis, it is due to atony of the whole system—the vital functions of all the organs being too weak to maintain the body's life. This atony is in itself a direct result of innutrition. The innutrition results from impoverished blood. This vascular impoverishment has three factors—(1) faulty digestion, as seen; (2) constant discharge of blood materials in the form of pus or mucus, or both, which contain a large proportion of inorganic salts and animal matters; and (3) lessened oxidation.

Delicate people, not phthisical, are more readily affected with pneumonic phthisis than those who are in robust health. This increased liability must be ascribed to weakness of the structures taking part primarily in the disease—the blood and lymph vessels. Such weakness is, according to physiological law, the result of innutrition.

The tendency to tuberculosis is frequently inherited—such con-

genital tendency must be due to weakness of the lung lymphatics, in its turn resulting from their innutrition. The lymph and blood-vessels, like all other tissues, derive their energy when once built from the energy-conveying machine—the nervous system. The value of this pathological knowledge will be evident when we speak of the therapeutical treatment of tuberculosis.

One question I have had much at heart, but have not been able hitherto to determine—my experiments in connection therewith giving no satisfactory result—Is there a lymphatic nervous centre?

Pulmonary tuberculosis is the inseparable accompaniment of pulmonary consumption. In certain cases it is the proximate precursor of phthisis; in others, it is merely secondary to a pneumonic process.

With the experimental therapeutics of tuberculosis I shall deal, in connection with that of scrofula, when the latter condition has been considered.

[*To be continued.*]

ART. XV.—*The Changes occurring in the Skin in some forms of Disease.* By HENRY T. BEWLEY, M.B., B.Ch., A.B., Univ. Dubl.; Sch. and ex-Med. Sch.; First Senior Moderator and Large Gold Medallist in Natural Science; Assistant to the Professor of Physiology, and formerly Assistant Demonstrator of Anatomy, Trinity College, Dublin.

[*Concluded from page 195.*]

ELEPHANTIASIS SCROTI.

THE most remarkable feature in this disease is the great hypertrophy of the fibrous tissue of the skin. The whole tissue of the scrotum, as deep as my section reaches, consists of dense connective tissue. In the superficial layer, lying immediately under the epidermis, it is composed of comparatively fine fibres, forming a close-meshed network; in the deeper parts the bundles are much thicker, and the network coarser. There is no fat to be seen anywhere. The outer coat of the blood-vessels is infiltrated with a number of small round cells; here and there enlarged lymph-vessels are seen.

The papillæ in elephantiasis are described by Rayer (Maladies de la Peau) as being considerably enlarged, and the epidermis thickened and pigmented.

Virchow (Krankhafte Geschwülste, Bd. II., p. 300) observes that in some cases the papillæ are enlarged, and the epidermis thickened;

while in others the papillæ are not much altered, and the epidermis is thin and smooth. In my sections the papillæ are generally diminished in size, and in many parts are completely atrophied, leaving the boundary between cutis and epidermis quite level. The deepest layer of the stratum spinosum is intensely pigmented.

The sweat glands and hairs have disappeared; the unstriped muscular fibres of the scrotum, which, according to Neumann, invariably become hypertrophied, do not appear to be much, if at all, more abundant than they are in a normal scrotum.

SUDAMINA.

In this disease—if disease it may be called—the stratum corneum is raised from the deeper layer of the epidermis by clear fluid, which thus forms a number of minute vesicles. The cells which form the floor of the vesicle subsequently become horny in places; thus, in my sections the spaces in which the fluid was collected are seen to be bounded on both sides by layers of horny cells.

The papillæ and superficial portion of the cells are slightly infiltrated with small round cells.

BOILS.

Boils are divided by Mr. Bryant (System of Surg., 1879, Vol. I., p. 168) into two classes. The first form is "a subcutaneous swelling, attended with little pain, until the skin over it inflames and suppurates." The second form begins as an inflamed follicle or pimple. These two classes, which are quite distinct clinically, the one from the other, present a different appearance on microscopic section. The boil which I have examined belongs to the first class. In it the skin over the focus of inflammation is as yet unaffected, except that the stratum corneum falls off in large scales rather more readily than elsewhere. In the superficial part of the cutis there is a good deal of inflammatory infiltration along the course of the vessels, but the mass of the inflammation is in the deeper layers of the true skin, extending to and involving some of the subcutaneous fat. The morbid appearances here consist in a violent localised infiltration of the tissues with a great number of leucocytes. In this inflammatory mass blood-vessels with thickened inner coats are seen. In the centre of the focus the tissue has lost its cohesion and fallen asunder.

About the origin of boils, Ziegler merely says:—"Boils are due to an inflammation of the tissue surrounding a hair-follicle or sebaceous

gland." These may be the tissues from which the more superficial boils—Bryant's second class—spring, but I do not think they can be the points of origin of those boils which are more deeply seated; in these cases it is probably the connective tissue about the sweat glands, or even the subcutaneous areolar tissue (Kochmann), in which the inflammation begins. The variety which begins in the tissue about a sweat gland has been described by Verneuil (Archiv. Gén. de Méd., 1884) and Bazin (Affections Génériques de la Peau, II., 319), under the name of hydroadenitis.

In a section of this boil, which was stained according to Gram's method, many micrococci are seen.

ICHTHYOSIS.

The surface of the skin in my specimen of this disease is extremely uneven.

The stratum spinosum presents its normal appearances; the cells of its deepest layer contain some pigment. The stratum corneum is rather thicker than usual, and presents a scaly appearance, being split up into a number of lamellæ or flakes. The boundary between these two layers is very sharply defined—the stratum spinosum ending in a layer of flattened cells (stratum granulosum), upon which the horny lamellæ lie; the stratum lucidum being in places distinct, and in places split up into the scaly flakes, which are stained yellow in lithia-carmine.

Among the horny layers I do not find any collections of pigment granules, as has been described by Lesser (v. Ziemssen's Cyclopædia).

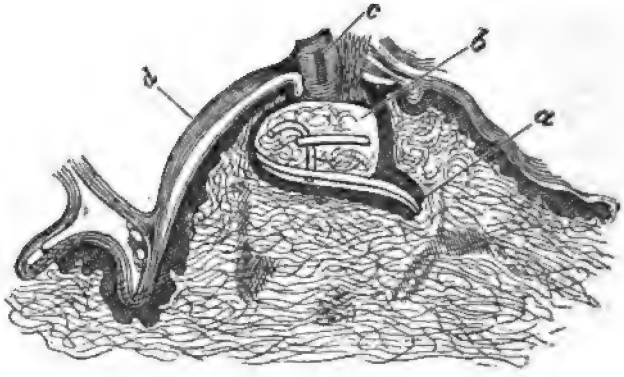
As regards the condition of the papillæ, Duhring states that in an ordinary case of ichthyosis they are longer than normal, and are infiltrated with cells, and that their vascular loops are enlarged. Neumann (Lehrbuch) and Lesser (v. Ziemssen's Cyclopædia) describe them as being much elongated, and as containing numerous pigment granules along the course of the vessels.

In my sections the papillæ are not increased, but are in places diminished in size, and the vascular loops in them are not enlarged. They appear to contain neither pigment granules nor any inflammatory infiltrations.

The internal coat of the veins in the subcutaneous tissue is described by Essoff as being increased in thickness, and their lumen as being narrowed, or even obliterated thereby. This thickening exists only in a very slight degree, if at all, in my specimens.

The arrectores pilarum are hypertrophied.

The sweat glands are numerous, and appear normal, although an absence of sweat is one of the characteristics of this disease. Neumann says these glands are usually enlarged.



Lichen Pilaris.

(*a*) Hair follicle.
(*b*) Expanded portion of same, containing coiled-up hair.
(*c*) The hair passing out through the roof of the expanded part.
(*d*) Horny layers of the epidermis.

In one of my sections there is a beautiful specimen of lichen pilaris (Kaposi), which often exists along with slight cases of ichthyosis, and of which I have ventured to make the accompanying sketch. It consists of a great enlargement of the mouth of a hair follicle, whose opening then becomes blocked up, and roofed over by some heaped-up horny epidermal layers; and in the cavity, globular in shape, which is thus formed, is contained the hair which is gathered into a coil, and is surrounded by some loose epidermal scales. After it coils in this cavity the hair is seen to pass out through the epidermal roof.

PSORIASIS.

The specimens of psoriasis which I have been able to obtain are, unfortunately, not very good, and many of the pathological appearances which have been described by different observers are not to be well seen.

The superficial layers of the cutis, including the papillæ, are infiltrated with leucocytes, which are seen in greatest numbers in the neighbourhood of the blood-vessels.

The papillæ are enlarged; but whether this enlargement is primary, due to hypertrophy of the papilla itself (Wertheim and

Neumann), or secondary, being caused by increased growth of the interpapillary processes of the stratum spinosum (Robinson and Thin), there is nothing in my sections to decide. Robinson says the disease consists essentially in a hyperplasia of the normal constituents of the rete Malpighii. In my sections, however, this layer does not appear to be much, if at all, increased in thickness. The vascular loops in the papillæ appear dilated.

There is some thickening of the internal coat of the arteries in the subcutaneous tissue.

There is said to be a hyperplasia of the external root-sheath of the hair follicles. This I do not find present. The openings of the hair follicles are dilated, and the scaly epidermal layers extend for some distance down into the hair follicle.

The deepest layer of cells in the stratum spinosum is pigmented. The cells lying next on these, where the epidermis is thick—as between the papillæ—are elongated and columnar; where it is thin—on the tops of the papillæ—they are polygonal. The several layers of columnar or spindle-shaped cells, which are described by Neumann as characteristic of psoriasis, are not at all well marked. On the other hand, in other diseases—*e.g.*, in my sections of erysipelas, the cells, for five or six rows in depth, are distinctly columnar in shape, and form perpendicular columns. After several layers of irregularly cubical cells come one or two of flattened (stratum granulosum); upon these lies a compact-looking clear layer (s. lucidum), which is stained yellow in lithia-carmine; on this lie a number of loose layers of horny scales. The surface of the section is seen to be very uneven.

ADDISON'S DISEASE.

In this specimen—one of the skin, in a well-marked case of Addison's disease—the pigment is mainly contained in the cells of the deepest layer of the stratum spinosum, and also in a few cells in the superficial part of the cutis.

The pigment consists chiefly of numbers of small brown granules. But, in addition to these granules, the substance of the cells appears to be uniformly stained brown. The few cells in the cutis which contain pigment, contain such a quantity of it that they appear quite black.

SCURVY.

In these sections are seen extravasations of blood into the cutis, subcutaneous connective tissue, and fat. The superficial extravasations are smaller than those more deeply seated.

TYPHUS.

The changes in the skin in typhus fever are not such as to present any very striking microscopic appearance. I do not find a description given by any author of specific histological changes.

In my sections I find collections of small round cells in the superficial layer of the cutis; and I think the vascular loops in the neighbouring papillæ are somewhat dilated.

The cells of the deepest layer of the stratum spinosum are in places pigmented.

SCARLATINA.

Professor Auspitz describes the changes in the skin in scarlatina as follows:—"At first, simple hyperæmia, without any alteration in the cutis; later on, sometimes accumulations of red blood corpuscles in spots in the skin; in many places ecchymoses and suffusion with the colouring matter of the blood; accumulation in the cutis of serum and white blood corpuscles."

In my sections I find here and there, in the more superficial layers of the cutis, accumulations of small round cells. I cannot see the "filling of the papillæ and of the stratum spinosum up to the horny layer with exudation cells," which has been described by Neumann as a "general typical condition in scarlatina." The collections of leucocytes are confined to the cutis, and do not, as described by Klein, extend into the stratum spinosum. The cells of this layer are small, and closely crowded together.

The stratum corneum is scaly, and shows a tendency to become detached in thin layers. There seems to be some loosening of the connection between cutis and epidermis, as in several places they have separated the one from the other, especially near a focus of infiltration. This may be caused by the knife cutting the section; but, unless their attachment had been previously weakened, I do not think they would have separated evenly. Of a distinct separation of the stratum corneum from the stratum spinosum, as is shown in Neumann's figure, I can see no trace.

ERYSIPELAS.

The cutaneous lesions vary greatly in different degrees of this disease, one author (Neumann) describing changes in almost every part of the skin, while another (Geber) hardly mentions any. My specimens, unfortunately, belong rather to the latter than to the former class.

Through the whole thickness of the cutis there are here and there

collections of round cells; this infiltration is seen chiefly in the neighbourhood of the blood-vessels, sweat glands, and hair follicles. The lymphatic vessels in the cutis are much dilated.

The stratum spinosum is thick, and consists, in great part, of columnar-shaped cells, arranged, one above the other, in perpendicular columns. This arrangement is, I think, probably due to rapid proliferation of the cells, which press on one another laterally, and so become formed into columns of cells. The stratum corneum is only represented by a few scales.

ADENOMA OF SWEAT GLAND.

These rare tumours of the skin I find very imperfectly described in all the books which I have consulted, most authors merely remarking that they are very rare.

Geber, in von Ziemssen's Cyclopædia, writes as follows:—"These tumours have a dirty grayish-white colour, and an uneven knobby surface. Their appearance on section resembles, in some slight degree, that of a mammary gland, both in colour, in hardness, and especially in the arrangement of the tubes interlaced one with another, between which are seen columns of fibrous tissue of varied thickness. On microscopic examination, we see, in some places, tubes which appear normal, in others, shorter or longer processes, solid, and completely filled with epithelium, club-shaped out-growths, isolated, or passing in a confused manner through the stroma, which is thereby thrust into the background. If the tubes which are capable of secretion be examined with sufficient care, it becomes evident that their lumen is here and there increased two or three times in diameter, and that the circumference of the coil has increased through proliferation of the epithelium which lines it, but that the enlarged masses do not at all correspond with the size of the tumour. It becomes more and more evident that the size of the tumour is partly formed by the increase in the number of tubes, some completely formed, others in the process of formation."

Verneuil describes a hypertrophy of the sweat glands, in which columnar epithelium takes the place of the flattened epithelial cells. He found the cells which lie next the wall of the gland elliptical in form, and arranged with their long axis perpendicular to the wall; all the cells converged in the long axis of the tube; in the centre the cells were either rounded off or polygonal.

Rindfleisch describes an adenoma which began in the deeper part of the gland, and in which many gland-tubes were formed.

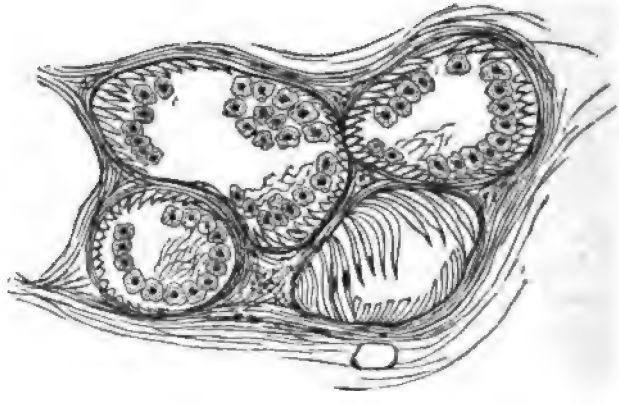
These are the only references to the histology of these tumours that I have found.

The tumour which I have examined was congenital, and was supposed, before microscopic examination, to be nævoid in character. It was about one inch in diameter, slightly raised above the level of the skin, and its surface was hard, knobby, and uneven; its colour was grayish-white.

Its microscopic structure is rather complicated, and appears to me to consist of a hypertrophy of every constituent part of a sweat gland. In these glands there are normally three parts—1st. The duct, which runs a pretty straight course through the skin. 2nd. That part of the coil which is situated next the duct, and which has the same structure as it. 3rd. The remaining part of the coil.

In my tumour the sweat ducts may be seen; they are much convoluted in their deeper part, but become straighter as they near the surface; they are greatly enlarged, being many times the size of a normal tube; they are lined by one or two layers of low cubical epithelium.

The first portion of the coil consists of tubes similar in structure to the ducts, but even larger in size, a single tube cut across being quite visible with the naked eye.



Tubes from the part of the sweat gland which contains epithelium and muscle cells.

The second portion of the coil consists of tubes which contain a single layer of cubical epithelium, which, in most cases, does not lie close to the wall of the tube, but more or less free in its interior. These cells are granular, and contain a round, deeply stained nucleus. Between these cells and the basement membrane may be seen, in tubes cut favourably, a layer of long spindle-shaped cells, which, as

the tubes are cut in every direction, may, in places, be seen in their whole length. These cells lie closely side by side, and are disposed in, or slightly obliquely from, the long axis of the tube. They are not granular, and contain an oval nucleus. These cells are, I think, the hypertrophied representatives of the smooth muscular cells which are normally found in sweat glands, while the cubical granular cells are the analogues of the epithelial cells.

These two kinds of tubes are not mixed indiscriminately together, but lie, for the most part, in separate groups. Together they form a continuous layer under the cutis, which, on section, presents a spongy appearance. The ducts may, in places, be traced up from the tubes of the first variety.

Here and there tubes of normal size and appearance may be seen among the enlarged tubes.

The papillæ over the enlarged glands are increased in size, and branch freely, extending almost to the surface; while between them branching and anastomosing columns of epidermal cells extend some distance into the cutis.

The papillæ and subjacent layer of the cutis are infiltrated with a number of small round cells, which are seen in large numbers along the course of the blood-vessels.

Several hair follicles are seen which are greatly dilated, and are lined by an external root sheath, which consists of several layers of flattened cells, of which those next the lumen are horny. The lumen is partly filled up with loose epidermal scales. The sebaceous glands appear normal.

IMPETIGO HERPETIFORMIS.

This disease, thus named by Hebra, is a severe form of that described by Dr. Smith as hydroa gestationis, and by Dr. Bulkley as herpes gestationis, and usually ends in death. The only description of the pathological changes occurring in it is, as far as I know, that of Neumann, who says merely:—"There is considerable enlargement of the vessels, especially of the veins and lymphatics. The whole of the cutis is richly infiltrated with round cells; the cells in the sweat-glands are increased in number."

In my sections the cutis is considerably infiltrated with a number of cells of various sizes, and whose nuclei are some small, and others larger, paler, and containing very distinct nucleoli. These cells are seen chiefly accumulated in the neighbourhood of the blood-vessels, and in the papillary layer. The epithelium in the sweat-glands may

have slightly proliferated, as Neumann says; but the lumen in the tubes is very distinct and quite free, and in places where the tubes are cut at right angles to their long axis the epithelium is seen to lie in a single layer on the basement membrane. The oblique muscular fibres are seen in many tubes with peculiar distinctness.

The veins and lymphatics appear dilated.

The stratum spinosum appears thicker than normal; the horny layer is for the most part thin; many of the nuclei of the cells of the stratum spinosum contain a vacuole. The surface of the skin is seen to be largely covered over with dried masses of purulent secretion. There are no actual ulcers producing a solution of continuity of the cutis from which this secretion comes; but in places the epidermis is seen to be thickly infiltrated with pus cells, which accumulate in such numbers that they press the epidermal cells aside, and the latter then become flattened and horny where they abut on this mass of pus cells. The papillæ in the neighbourhood are enlarged, and the tissue in them appears softened and œdematous.

In the œsophagus of this case, which was also affected by the impetigo, similar appearances are seen. The mucous membrane is infiltrated with leucocytes, but not to any very great extent. The epithelium appears in places as if it were corroded away, forming depressions or excoriations, which extend almost down to the basement membrane. The surface of these excoriations is covered with a layer of loose cells and some coagulated secretion. In other places the mucosa is more completely destroyed, and the muscularis mucosæ is only covered by a confused looking layer, whose superficial part consists of coagulated secretion, and in whose deeper part some nuclei are still seen.

RODENT ULCER.

The ulcer which I examined was one of long standing, which had extended over one side of the face, and down the side of the neck to the clavicle.

The tissue, of which the base and edges of this ulcer are composed, consists of a loose, fibrous network, interspersed irregularly, among which are a number of cells. The fibrous tissue, however, forms a considerable part of the whole. The cells vary much in size, some being large, with large nuclei, like an ordinary epidermal cell, while others are much smaller.

Although the ulcer was so large, only the skin and subcutaneous tissue are affected.

BURN OF THIRD DEGREE.

These sections are taken from the arm of a woman, who died about three weeks after having been very extensively burned.

The burn extends down to the deeper parts of the cutis; its base and edges are composed of granulation tissue, and here and there extremely dilated arteries and veins are seen cut across, some of which, although of considerable size, are only separated from the surface by the thickness of their own wall.

In the neighbourhood of the burn there are seen, in the cutis, several distinct inflammatory foci, consisting of a mass of leucocytes.

In the neighbourhood of the burn the epidermis is seen to extend, in several places, down into the cutis, in the form of long, narrow, branching columns of cells.

XANTHOMA TUBEROSUM.

Of the pathology of this disease, there are two accounts given. According to Geber and Simon, the nodules consist of a hyperplastic development of the cells of the sebaceous glands; according to Pavy and Ziegler, of "a new formation of fibrous tissue, in which fat is subsequently developed."

The nodule, of which I have made sections, was taken from the back of a patient, who died of some intercurrent disease. It consists of a fine network of fibrous tissue, containing many cells, many of which are lymphoid or epithelioid in character; it extends up to the basement membrane, and is separated by a well-marked line of demarcation from the surrounding tissue. (Schwimmer describes a nodule which he examined as "passing off gradually into the surrounding tissue").

In the nodule are seen hair follicles, sweat glands and their ducts, and bundles of smooth muscular fibres. Although there are several hair follicles, cut in different directions, there are no sebaceous glands to be seen. Neumann says:—"One sees a considerable hyperplasia of the cells of the enlarged sebaceous glands." I do not see any fatty degeneration.

The epidermis is normal, except that in its deepest layer a quantity of brown pigment granules are contained. In Schwimmer's case it was thinned and devoid of papillæ.

DRY GANGRENE OF SKIN.

In this specimen, of which I have unfortunately been unable to obtain the history, part of the skin and underlying adipose tissue is in the condition of dry gangrene.

The dead skin appears thinned, and the fat cells extend, in places, almost to the surface; it consists of a dense mass of connective tissue, containing a number of small shrivelled nuclei. The epidermis has, I think, fallen off.

The living epidermis, as it approaches the line of demarcation, changes its characters, becoming thinner, and most of its cells becoming horny scales. At the line of demarcation the living cutis is infiltrated by a number of small round cells, which extend through it perpendicularly to the surface.

In a section which I stained according to Gram's method, a number of micrococci are seen in the blood-vessels.

THE THERAPEUTIC VALUE OF CHLORIDE OF CALCIUM.

Dr. R. W. Crighton contributes a valuable paper on this subject to *The Practitioner* for September, 1885. He says that, in suitable cases, he knows of no other therapeutic agent which will produce the same good results—first, in glandular enlargements of the neck in children, where the glands seem matted together, and are almost of stony hardness, and in which both iodine and cod-liver oil have failed to reduce the bulk. He has found the chloride of calcium equally efficacious in cases where suppuration of the cervical glands has occurred, even in adults; and in scrofulous caries he has witnessed quite as remarkable results from the prolonged use of the remedy as in scrofulous enlargement of the cervical or other glands. Valuable as iodine and cod-liver oil are in many cases of the large class of diseases comprehended in the term "scrofulous diathesis," Dr. Crighton yet claims for the chloride of calcium, in certain instances, a special therapeutic power which neither of these remedies possesses, and, in all cases of this "diathesis," the merit of a valuable *alternative* remedy. The author always prescribes the crystallised chloride of calcium, as the anhydrous salt forms a turbid solution, and has an unpleasant taste. The recognised dose is from ten to twenty grains, or even more; but Dr. Crighton has generally given a smaller one—one, two, or three grains for young children, and rarely over twelve or fifteen for adults. The formula which he has adopted is that recommended by Dr. Sinclair Coghill—viz., five ounces of the crystallised salt dissolved in twelve fluid ounces of simple syrup. The dose of this solution has varied from 5 to 40 minims, according to age and other circumstances. He has always given it in milk after meals.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The British Pharmacopœia. London: Printed and Published for the Medical Council, by Spottiswoode & Co. 1885. 8vo. Pp. 536.

AT last we are permitted to welcome the long-needed new edition of the British Pharmacopœia, and hasten to present our readers with a short notice of the revised issue.

While no change has been made in the arrangement or the general construction of the work, many internal changes have been rendered necessary since the publication of the last edition in 1867 by the demand for the introduction of new remedies and by the rapid advances which have been made in our knowledge of the sources and scientific characters of the drugs already recognised. Professors Redwood, Bentley, and Attfield acted as editors, and it is only due to these gentlemen to say that in the departments of pharmacy, botany, and chemistry which they severally represent, the evidences of painstaking care are to be found on every page, and the present edition may be accepted as fairly reflecting the existing state of knowledge.

In chemical matters, the old system of notation which previously was given side by side with the new has been omitted, and the nomenclature has been brought more into harmony with that employed by modern scientific chemists. For example, all metallic salts are now named after their metallic radical—*e.g.*, compounds of soda, potash, magnesia, &c. (old style), are referred to sodium, potassium, magnesium, &c., in conformity with the nomenclature of the other metallic compounds.

Another point of practical importance which has been attended to is the more accurate statement of solubilities of drugs in various menstrua, and the directions for applying re-agents to characterise products and detect impurities have been considerably extended. The edition of 1885 contains 79 pages more, and of a larger size, than the edition of 1867. This increase of size is chiefly due to the introduction of a large number of new remedies, and, in

fact, we find a formidable list of 114 new drugs and preparations admitted into this edition. Upon the value of some of these novelties opinion may be divided, but with the great majority of them no cavil will be found. We notice that our old friend, Donovan's solution, is introduced under the title of liquor arsenii et hydrargyri iodidi. It contains about 1 per cent. by weight of arsenious iodide, AsI_3, and of mercuric iodide, HgI_2.

The revisers have not, in our opinion, been so happy in the list of omissions. Not that we in the least wish for the retention of any one of the twenty-two articles mentioned in their *Index Expurgatorius*, which includes—*e.g.*, areca, iodide of cadmium, castoreum, digitalin, dulcamara, green iodide of mercury, and elm bark; but we believe that many will concur with us in the view that the Pharmacopœia is still burdened with a considerable number of useless or superfluous articles, of which the sooner we are rid the better.

The printers, Messrs. Spottiswoode, have performed their part in excellent style, and we observe that the Index has been enlarged to the extent of four pages.

The general supervision of the preparation of the work was entrusted to a Committee of the Medical Council, who may be congratulated upon the successful completion of the important task set before them.

The Committee consisted of the following members:—Dr. Quain, Chairman; Sir Henry W. Acland, President of the Council; Edward Bradford, Esq.; Thomas Collins, Esq.; Dr. Haldane, Professor Rawdon Macnamara, Sir Henry A. Pitman, and Dr. Aquilla Smith.

A Practical Treatise on the Diseases of Women. Prepared with Special Reference to the Wants of the General Practitioner and Advanced Student. By JOHN THORBURN, M.D., F.R.C.P. With Chromo-Lithograph and over Two Hundred Illustrations. London: Griffin & Co. 1885.

THE sad circumstances under which this book has come forth almost forbid, even were we inclined to offer, hostile criticism. The object which the author had in view was to afford the general practitioner of medicine or the advanced student a view of the present state of gynæcological knowledge and practice. This purpose it fulfils very well, but the specialist will find little that is new in its pages. It

deals more fully with the medical side of uterine therapeutics, which has, perhaps, been too much neglected of late, than with the surgical. The latter part of the work is in many ways defective—*e.g.*, amputation of the cervix with the chain or galvanic écraseur, or by "the circular sweep of a good sharp bistoury, the hæmorrhage being controlled by the tampon or styptics," is rather bungling surgery, and recalls the time when limbs were amputated with red-hot knives, and daubed with boiling pitch. We cannot endorse the views of Dr. Sinclair as to the very formidable character of Emmet's operation in cases of bilateral laceration of the cervix, and think it the best practice to do both sides at one sitting. Nor do we believe that the author's statements as to the inutility of the secondary operation for prolapse are consistent with the published results.

Upon the whole, however, the work is deserving of commendation. The author has performed the difficult task of sifting and condensing matter, much of which is obscure, and representing opinions which are often conflicting, with judgment and discrimination. The publishers have done much to render the work popular by the attractive manner in which they have brought it out—the paper, printing, and illustrations being excellent.

TRANSACTIONS OF AMERICAN SOCIETIES.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland. Eighty-sixth Annual Session, held at Baltimore, Md., April, 1884. Baltimore. 1884. Pp. 248.

Transactions of the New York State Medical Association for the year 1884. Vol. I. Edited for the Association by AUSTIN FLINT, Jr., M.D., of New York County. New York: Appleton & Co. 1885. Pp. 654.

THE Maryland Society is older than the century, and, so far as may be inferred from the appearance and contents of this volume of its Transactions, is likely to flourish for many years to come. Almost four-fifths of the volume, however, is of mainly local interest, consisting of Reports of the Faculty's Committees, the Annual Address, and Reports of Sections, of which there are eight; Surgery holding the place of honour, and "Ophthalmology, Otology, and Laryngology" bringing up the rear. After the Reports eight "Volunteer Papers" occupy fifty pages. One of these, by Dr. Teackle (State Vaccine Agent of Maryland), bears upon the ques-

tion of the identity of variola and cow-pox. He concludes from his investigations that cow-pox is the direct consequence of small-pox, and of it alone; that "inoculation of the cow with small-pox virus produces cow-pox;" and that vaccine "virus which has been obtained through inoculation of a heifer with small-pox virus has proved eminently satisfactory, except that its action is probably too severe, but this fault can be easily overcome by passing it through the blood of another heifer before using it upon the human subject."

We cannot but regret the causes to which we are indebted for the handsome volume containing the Transactions of the New York State Medical Association. A party in the New York State Medical *Society* succeeded in carrying a "New Code" of medical ethics, inconsistent with the code adopted by the American Medical Association, and having the effect of removing "the barrier dividing members of the regular profession from irregular practitioners." The Society thereby cut itself off from affiliation with the American Medical Association and other home and foreign institutions. This action of the Society appears to have been distasteful to a large majority not only of practitioners in the State of New York, but even of its own members; and, attempts at conciliation having failed, the New York State Medical Association was organised in February, 1884, and enrolled over five hundred Fellows during the first year of its existence. The results of its labours in 1884 are recorded in the volume which we are about to notice, edited by Dr. Austin Flint, Jr. It contains an Annual Address by the President (Dr. Didama), Addresses on Surgery, Obstetrics and Gynæcology, and Medicine, and forty-six miscellaneous papers, and gives in full the Code of Medical Ethics of the American Medical Association. We shall briefly notice a few of the more important papers.

In a paper on Transfusion, Dr. Hutchison devotes a page or two to transfusion of milk, the suggestion of which he attributes to Dr. Hoader, of Canada, in 1850, who employed it in three cases of cholera. Of these, one died and two recovered. In 1873 Dr. Howe, of New York, injected milk into the veins of seven dogs and two human patients, and all died. Dr. T. G. Thomas attributed the disastrous results to the use of milk which was not fresh, and he has reported seven cases with four complete recoveries. Several successful intra-venous injections of milk were performed in Philadelphia. The author had operated three times, twice in one case. In this—a case of pernicious anæmia—the patient's condition im-

proved considerably after the first operation; but the symptoms recurred, and no benefit followed a repetition of the injection. Dr. Hutchison concludes that the practice, though sometimes beneficial, is a dangerous one:—"The fat and casein of milk transfused into the blood, before being digested, represent an unassimilable material which is discharged from the organism." A remark by the President of the Section, on the subject of saline injections in cholera, is worth preserving:—"Salting a patient and curing him are two different things."

Dr. Carroll contributes a short paper on an important and somewhat obscure subject—the duration of contagiousness after acute infectious diseases. The inquiry is difficult, specially for two reasons—the necessity for excluding the effect of fomites in communicating the diseases, and the varying susceptibility of different persons and of the same person at different times. In the *British Medical Journal* of 30th July, 1881, Dr. Miller, of Dundee, gave a table for variola, typhus, scarlatina, diphtheria, whooping-cough, and measles; to which Dr. Carroll takes exception, as omitting altogether enteric fever and cholera, and for "the rather arbitrary assumption of intervals which, in some instances, may seem unnecessarily long." Unfortunately, he has no rules to propose in substitution for those to which he objects; and inquiries addressed to "leading medical teachers and hospital physicians" elicited answers so discrepant as to be valueless.

A short paper by Dr. C. Buckley brings to notice the danger of wearing red-rubber teeth plates, which are coloured with a mercurial preparation, and which not infrequently set up chronic mercurial poisoning. Dr. Flint's able article "On the Dietetic Treatment of Dyspepsia," as might be inferred *à priori* from its authorship, well repays perusal. It is startling to read that Dr. Flint asks dyspeptic patients if they regulate their diet; and when (as usually) they say emphatically that they do, that he rejoins, "This is a good reason for your having dyspepsia. I never knew a dyspeptic get well who undertook to regulate diet." He prescribes regulation of the diet not by fixed rules, but by the appetite, the palate, and common sense; like "the learned Dr. Muggins, who suits his physic to his patient's taste." He has little faith in personal experience in matters of diet. "As a rule," he says, "articles which agree with most persons do not disagree with any . . . and, in general, it is fair to regard supposed idiosyncrasies as purely fanciful. Patients not infrequently cherish supposed idiosyncrasies with gratification. The

idea is gratifying to egotism, as evidence that Providence has distinguished them from the common herd by certain peculiarities of constitution." Dietetic treatment of dyspepsia is thus summarised:—

"Do not adopt the rule of eating only at stated periods—twice or thrice daily. Be governed in this respect by appetite, and eat whenever there is a desire for food. Eat in the evening, or at bedtime, if food be desired. Insomnia is often attributable to hunger. In the choice of articles of diet, be distrustful of past personal experience, and consider it to be a trustworthy rule that those articles will be most likely to be digested without inconvenience which are most acceptable to the palate. As far as practicable, let the articles of diet be made acceptable by good cooking. As a rule, the better articles of food are cooked the greater the comfort during digestion. Never leave the table with an unsatisfied appetite. Be in no haste to suppose that you are separated from the rest of mankind by dietetic idiosyncrasies; and be distrustful of the dogma that another man's meat is a poison to you. Do not undertake to estimate the amount of food which you take. In this respect different persons differ very widely, and there is no fixed standard of quantity which is not to be exceeded. Take animal and vegetable articles of diet in relative proportions as indicated by instinct. In the quantity of drink follow nature's indication—namely, thirst. Experience shows abundantly that with a view to comfortable digestion there need be no restriction in the ingestion of liquids."—(P. 147.)

To these rules, with one exception, we have little objection to offer. To the first we emphatically object.

"A Successful Case of Nephro-lithotomy" (p. 150) is interesting to surgeons; and so is a statistical paper on "Double Synchronous Amputations" (p. 161), by Dr. Lynde. Ninety-two cases are tabulated, nineteen-twentieths of which were the result of railway injuries. Ten cases of amputation of both legs were due to frost-bite, and all terminated in recovery. Of 34 such cases resulting from railway injuries, nearly two-thirds were successful. Of 17 amputations through one thigh and the opposite leg, 8 were successful. Of 6 amputations through both thighs 3 cases recovered, "two of the recoveries being boys of eight years of age, and the amputation being through the lower third." Of 6 cases of amputation of the thigh and upper extremity, 3 recovered; and of 5 of the leg and upper extremity, also 3. In one case three limbs were removed at once, both fore-arms and one leg, and it recovered. Dr. Colvin reports (p. 218) some cases illustrative of the value of venesection in puerperal eclampsia. His paper is offered as an epitome of the experience

of two physicians, his father and himself, during seventy years; and he insists strongly upon the superiority of venesection to any other treatment of the convulsions of pregnant and parturient women. In forty years of midwifery practice he never saw a fatal case of this complication, "strange as the fact may seem; and, while I do not wish to be understood as asserting that every case, in which the course of treatment I have indicated is carried out, will recover, yet, I believe, if this treatment be pursued before consciousness is abolished between the seizures (and usually it is not between the first two), and before the peculiar cardiac action that I have described presents itself, that every case will recover; and I believe a very large majority of cases will recover under this treatment, even after these grave symptoms have become developed." Dr. Bozeman's speculation as to the ætiology of extra-uterine pregnancy will be new and probably interesting to some of our readers. "The belief," he says, "has become generally accepted that women with long-enforced sterility after fruitfulness are more prone to ectopic gestation than those passing through the fruitful period of their lives in the regular exercise of their procreative functions." This fact, if it be a fact, he attributes to the greater prevalence of backward displacements of the uterus in the former:—

"I maintain that in retroversion, and especially in retro-latero-versions of the organ, one ovary is often dragged down and fixed, with a corresponding displacement of the Fallopian tube, at a lower plane in the pelvis than that of the same structure on the opposite side, and that, as a result of such malposition, there is necessarily more or less rolling or turning of the uterus to the affected side. By this form of displacement, not only is the axis of the uterus placed on a line horizontal with that of the vagina, but the entrance into the uterus of the Fallopian tube on the same side is depressed to a lower level than the opposite one. The change of relationships in the parts and in their aptitudes, as regards the cervical canal, the plane of the cavity of the uterus, and the utero-tubal orifice, is highly favourable to the entrance of the spermatozoa and their migration in a continuous line. In the reversed order of relationships of the same structures, and from the same anatomical considerations, the aptitude of the affected Fallopian tube, in its lower or fimbriated extremity, to receive and to convey the ova from the corresponding ovary, is in a like degree diminished. From the movements, then, of the spermatozoa out of the vagina, which are almost unopposed by physical obstructions and the operation of gravity, and of the ova coming from the corresponding prolapsed and fixed ovary almost completely opposed by the law of gravity, it

is easy to see that the chances, mechanically considered, are altogether in favour of the former reaching the depressed utero-tubal orifice instead of the elevated one, and of falling into the Fallopian tube itself, as into a deep well, to meet, at some point in their descent (perhaps in the fimbriated extremity of the tube, or upon the surface of the corresponding ovary), an ascending or stationary ovum, or ova, ready, in some one of these localities, for the impress of fructification, or conception, and gestation. To these pathologico-physiological conditions of the uterus and its annexa, with the physical phenomena of abnormity regarding the performance of their functions pointed out, may we not reasonably ascribe the occurrence of ectopic gestation rather than to the length of time of widowhood after fruitfulness, the latter itself presupposing the sequelæ of retro-latero-version, the first link in the chain of morbid results?"—(P. 259).

We can do no more than direct attention to Dr. Dennis's paper on "The Relations between Tuberculous Joint Disease and Tuberculosis" (p. 330), with the remarks of Dr. S. W. Gross upon it. The Address on Medicine (p. 376), by Dr. Austin Flint, is devoted to "medicinal and non-medicinal therapeutics." "What," he asks, "is the prevailing popular sentiment at the present time, in all countries, respecting the part which medicinal therapeutics play in medical practice?" "How many patients at this day would be satisfied to be treated for an illness without drugs?" We may add, How many of us venture to treat a disease, in or out of a hospital, without drugs? Under the heads of "diet," "the use of alcohol," "catching cold," and "mental influence," Dr. Flint discusses, in an eminently practical way, the non-pharmacal treatment of disease. In these days we scarcely need to have the necessity of feeding our patients urged upon us; but we may lose sight of the facts that too much food is a less evil than too little, and that "patients cannot be overfed so long as the food taken is digested, assimilated, and appropriated by the tissues." Patients' tastes should be consulted, even when they may appear to be morbid. "How common, when food is allowed, is it for patients to be denied the articles of food which they desire, and to be made to take articles which they dislike." In certain diseases, indeed, the perceptions are blunted, and instinct fails us as an indication of the needs of the system. This is especially the case in typhus and typhoid fevers. Here our main dependence for the nutrition of the system is on milk and eggs—"foods in which are combined, by the hand of Nature, in due proportion, all the alimentary principles." To these farinaceous

preparations and meat are supplementary. With regard to the latter, we are cautioned against the popular delusion that beef-tea and its congeners, or solutions, or extracts, or expressed juices, represent, even faintly, the nutritive value of the meat from which they are derived. "The quantity of nutritive material in these preparations is insignificant, or *nil;* and it is vastly important that they should be reckoned as of little or no value, except as conducive indirectly to nutrition, by acting as stimulants of the secretion of the digestive fluids, or as vehicles for the introduction of nutritive substances." Water and pressure not only fail to extract the alimentary principles from meat, but they do extract products of disassimilation; "hence, not very inaptly, beef-tea has been compared to urine; and, a few years ago, a German experimenter declared that he produced fatal toxæmia in dogs by feeding them with this popular article of diet." Leube's Meat-Solution, improved by Rosenthal, is an equivalent for solid flesh, being meat artificially digested into peptones, and containing all the alimentary principles of the flesh. As to "catching cold," we cannot but agree with Dr. Flint that, in the treatment of diseases, fevers more especially, much mischief results from sacrificing free aëration to fear of chill:—"Let the axiom, 'a fever-patient never catches cold,' be reiterated until it becomes a household phrase. Let the restorative influence of cool, fresh, pure atmosphere be inculcated."

Our space will not permit more than reference to a useful paper of Dr. Griswold's on "False Albuminuria" (p. 398), under which he includes two classes of cases—those "in which the urine does not contain albumen, but in which a precipitate resembling albumen is caused by the ordinary tests;" and "those in which albumen is actually present in the urine, but does not come from the kidney."

In conclusion, we must express a hope that the breach between the two sections of our brethren in the State of New York may speedily be healed, even though the reconciliation should deprive us of the pleasure and profit derivable from a succession of volumes such as this.

Aids to Botany. By ARMAND SEMPLE, M.B. London: Baillière, Tindall, & Cox. 1885. 12mo. Pp. 103.

THIS is a little handy book of a very difficult and extensive subject. The author very properly remarks that it is difficult to deal with the subject without illustrations. We feel well inclined to endorse

his remark, with the addition that it is difficult to do so even with them. It can be carried in a small pocket, and might be useful in botanical rambles to verify plants and orders.

The Advertisers' Guardian, 1885. By LOUIS COLLINS. London. Crown 8vo. Pp. 311.

THIS work contains a treatise upon advertising and a vast number of advertisements on every subject, from infants' food to patent coffins. It is of trans-Atlantic energy and ingenuity, and shows how keen is the struggle for existence in these days of competition. Apparently only the strongest will survive.

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1. *Unbelief: an Essay addressed to Young Men of every Christian Denomination.* By MAURICE C. HIME, M.A., LL.D. 1885.
2. *A Schoolmaster's Retrospect of Eighteen and a half Years in an Irish School.* By MAURICE C. HIME, M.A., LL.D., Head Master of Foyle College, Londonderry. 1885.

DR. HIME is an author of considerable ability and versatility, and writes in a clear and interesting style. He has compiled a Latin Grammar, and has discussed in print from time to time such varied topics as Intermediate Schools in Ireland; Self-Education; Ready Money; Masonic Hints; Morality, &c., &c.

Quite recently he has published two small works, whose titles stand above; and although they scarcely fall within the class of books adapted for review in this Journal, we feel that we shall not do amiss in calling attention to the second book, which refers to some matters that relate to the medical profession, and to methods of teaching in general.

Of the Essay on Unbelief we need not say more than that it appears to us to be excellently calculated to fulfil its object. Its arguments are of a temperate and reasonable character—such as would be likely to impress the minds and hearts of young men, to whom they are specially addressed.

The Schoolmaster's Retrospect is worth reading; and the author carries his reader along with him in his enthusiastic summing up of the many advantages of a schoolmaster's life. Indeed, so far as his personal experience goes, he considers the disadvantages to consist only in (1) the dread, and (2) the reality of sickness

among the boys. Dr. Hime is strongly of opinion that a schoolmaster ought to receive a medical as well as an arts training, and that he should, if possible, take out the M.B. diploma, not, of course, with the idea of actually practising as a physician within his own school or anywhere else, but for many reasons touching the physical and moral health of the boys, the sanitary arrangements of the school, the isolation of the sick, &c.:—"In short, to my mind, a medical education is simply a *sine quâ non* in every duly qualified schoolmaster" (p. 67). Section XXIII., On the Use of the Blackboard, emphasises the advantages gained in teaching by appealing to the eye as well as to the ear, and we quite endorse Dr. Hime's statement that the blackboard ought to be used for the purposes of fixing the attention and facilitating explanation far more than it is.

WORKS ON DISEASES OF THE SKIN.

Lectures on Acne, Acne Rosacea, Lichen, and Prurigo. By Tom Robinson, M.D. London: H. Kimpton. 1884.

Some of Dr. Robinson's hearers who were present during the delivery of these Lectures requested him to publish them in book form. The style is conversational, the pathology somewhat loose, and we scarcely think that the Lectures will make as favourable an impression upon the profession as they appear to have done upon the author's audience.

The Pharmacopœia of the British Hospital for Diseases of the Skin, London. Third Edition. Edited by Balmanno Squire, M.B. London: J. & A. Churchill. 1884.

A useful collection of formulæ, carefully drawn up, and including variety enough to satisfy the most ardent therapeutist. Brief memoranda as to their special virtues are appended to the formulæ, and a full index completes the little work, which is deserving of attention.

Pamphlets on Diseases of the Skin. By Dr. H. W. Stelwagon, Philadelphia.

We have received a bundle of reprints on various cutaneous subjects, by Dr. Stelwagon, which evince his familiarity with dermatology, and contain some interesting matter. Among them we may note—a case of erythematous eruption from the internal use of chlorate of potassium (the first on record); a case of psoriasis in a child under

four years of age (a rare occurrence); and some practical remarks upon the uses of the oleates in cutaneous diseases, and on the treatment of acne indurata. In the last-named affection he has sometimes made use of electrolysis with advantage, introducing the negative needle deep into the lesion for a few seconds; but the operation is painful, and it is difficult to see how it can be expected to give better results than local stimulation by nitrate of mercury or carbolic acid.

The Oleates: an Investigation into their Nature and Action. By JOHN V. SHOEMAKER, A.M., M.D. Philadelphia: F. Davis. 1885.

DR. SHOEMAKER has, as is well known, taken a great deal of trouble for some years past to introduce the salts of oleic acid to the notice of the medical profession. This small volume contains a *résumé* of his numerous writings concerning the oleates and their uses, together with some new matter.

The individual oleates with which he has experimented are those of aconitine, atropine, aluminium, arsenicum, bismuth, cadmium, cocain, copper, iron, lead, mercury, morphine, nickel, quinine, silver, strychnine, tin, veratrine, and zinc. The oleates of mercury, zinc, lead, and bismuth, appear to have the best claims to attention, and the oleates of mercury and zinc are recognised in the new edition of the British Pharmacopœia. The chapter on the physiological action of the oleates is weak, but the observations on their therapeutic effects are valuable, and Dr. Shoemaker may be congratulated upon having added some really useful agents to the Materia Medica.

Electricity, and its Manner of Working in the Treatment of Disease. By W. E. STEAVENSON, M.D., M.R.C.P. London: J. & A. Churchill. 1884.

WE have here a curious contrast. Dr. W. E. Steavenson leads off with an essay—a thesis for the degree of M.D. of the University of Cambridge—its purport being to show the advance made in the application of electricity to medicine during the past century. He takes as a model for his thesis one written by an ancestor for the M.D. degree of the University of Edinburgh (Dissertatio Medica Inauguralis, de Electricitate et Operatione ejus in Morbis Curandis. R. Steavenson, A.M. Edinb., MDCCLXXVIII.). The thesis referred to was one of the earliest dissertations upon medical

electricity written by an Englishman, and at the time was a work of much repute. A translation of it is furnished by the Rev. F. R. Steavenson.

Dr. W. E. Steavenson's essay is a short one, and the chief point of interest in it is the suggestion that negative electricity has a deleterious effect upon health. He believes that he has produced a fit of asthma in himself by accidentally charging his body with negative electricity, and thinks that changes in atmospheric electricity have probably much to do with the unpleasant effects which certain individuals experience under special meteorological conditions.

On the Coca of Peru and its Immediate Principles: their Strengthening and Healing Powers. By J. L. W. THUDICHUM, M.D. Baillière, Tindall, & Cox. 1885.

THIS *brochure* contains a summary of the chief facts known about the coca plant and its uses, but adds no new information. More than half of the pamphlet is occupied with a historical and botanical account of the coca plant, together with details somewhat irrelevant, as to the cultivation and production of coca, its local retail trade, the amount of capital employed in cocals (*i.e.*, coca plantations) &c.

An Introduction to Practical Organic Analysis. By G. E. R. ELLIS. Longmans, Green & Co. 1885.

WE cannot thoroughly recommend this little book either to the medical student, for whose benefit it was originally intended, or as a general introduction to the study of Organic Analysis. It is little more than a catalogue of tests, and but adds one more to the crowd of elementary text-books of practical chemistry which has accumulated within the last few years.

TANNATE OF MERCURY FOR SYPHILIS.

THE most eligible form of mercurial for the treatment of syphilis, according to Leblond, Lustgarten, and Kaposi, is the tannate, containing fifty per cent. of the metal. ℞. Hydrargyri tannat., (3 grams.) gr. 45; ext. et pulv. glycyrrhizæ, q. s.—M. S.-Make sixty pills, and take from four to eight daily. This form of mercurial does not disturb digestion, and has been found most efficient.—*Revue Médicale de Louvain*, June, 1885, and *Philadelphia Med. Times*, August 8, 1885.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ACADEMY OF MEDICINE IN IRELAND.

President—J. T. Banks, M.D.
General Secretary—W. Thomson, M.D.

SUB-SECTION OF STATE MEDICINE.

Chairman—J. W. Moore, M.D. Univ. Dubl., F.K.Q.C.P.
Secretary—H. C. Tweedy, M.D. Univ. Dubl., M.K.Q.C.P.

Thursday, May 14, 1885.

Dr. J. W. Moore in the Chair.

Relative Disease and Death-Rate in Town and Country.

The Registrar-General (Dr. Grimshaw) gave a *résumé* of his paper on the relative prevalence of disease, and on the relative death-rate in town and country districts in Ireland. [This paper appeared in the number of this Journal for May, 1885, Vol. LXXIX., page 385.]

The Chairman regarded the remarkable coincidence between the average disease and death-rate as one of the strongest arguments that could be adduced in favour of the registration of disease. Some of the epidemic diseases seem to fall more heavily upon Dublin South than upon Dublin North, but measles and scarlet fever the reverse.

Dr. Jacob asked how far these interesting and important facts ought to be discounted by the deficiencies of registration; because the curves on the charts, even on a cursory view, revealed certain points which he should not have expected. In diagram 2, for instance, he found that Dundalk was the most healthy district in the whole of Ireland, the death-rate from zymotic diseases being down to 22 per 10,000, from phthisis to 16, and from diseases of the respiratory organs to 32. But he never understood that there was anything specially salubrious about the Dundalk district, and therefore he apprehended there might be influences at work to

disturb the mathematical accuracy of the diagrams. Again, in Derry there was an inconsistency in registering under phthisis and diseases of the respiratory organs a death-rate of 20, whereas for phthisis alone the registered death-rate was 20. Accordingly, he asked how far it was probable that the want of efficiency in registration might affect the curves.

Dr. Henry Kennedy emphasised the extreme value of the Registrar-General's information and remarks. The fact had been long established that the towns were less healthy than the country, and there was a perceptible difference too in favour of the healthy appearance of the country population, townspeople being more or less pallid. He mentioned that an American writer had discovered a particular fungus that generated measles, and asked whether the epidemic in Belfast was due to flax and materials used in the linen manufacture. It was proved that bad straw generated camp measles. Another cause for the measles in Belfast was that the rainfall there was greater than in Dublin. He had no doubt that a dry climate had an important bearing on health—for instance, people who went to reside in England at once lost rheumatism with which they were afflicted here. The registration of the causes of death depended on the professional knowledge of the medical men in each locality, and he had no reason to believe that facilities of knowledge differed in one place more than another.

The Registrar-General, in reply, observed that the greater portion of Belfast stood on very damp ground, whole streets being built on piles, while Lisburn and Lurgan were on comparatively dry sites. A great portion of the soil of Belfast was very wet and sticky, and the amount of sun and light required to make ordinary plants grow was astonishing. Within his own recollection parts of Belfast where houses now stood were covered by the sea. At the same time, the people in Dublin who lived in fourth-class accommodation numbered 44 per cent., or very nearly half the population, while in Belfast only between 6 and 7 per cent. lived in tenement houses. House-accommodation had a great deal to do with the death-rate. In the country the people looked on houses more as a shelter from bad weather or for the night than as habitations, the doors being always open. He did not at all accept the flax origin of the measles, since from the way flax was worked there could never remain any quantity of mouldy material, although there was a good deal of decaying woody fibre in the preliminary stages of steeping and drying of the flax. That process, however, was not connected with the mills, and was carried out before reaching the mills. No doubt there was a vast deal of dust in the mills, but not musty dust. Therefore it was unlikely that measles would arise to any extent in connexion with flax manufacture.

Compulsory Notification of Infectious Disease.

Dr. Jacob read a paper on the compulsory notification of infectious disease.

Dr. Fitzpatrick concurred in Dr. Jacob's observations that the medical profession would be placed in a most invidious position, without any possible good arising to the public. Some years ago he was called by a professional brother to visit two children in one of the most fashionable schools of Dublin. Measles broke out. The husband of the lady who kept the school said he feared she had contracted the disease. Having seen the lady he found she was suffering from scarlatina. Her husband said if that went out they were ruined for life. Under the circumstances he said if his directions were strictly adhered to he would preserve the rest of the house from contagion. The husband having promised, the lady was removed to the top story of the house, and it was arranged that the nurse should never leave the room, and that every article should be placed in chloride of lime. The patient recovered, and no one else got the disease. Thus the reputation of the school was preserved, and had he acted differently it would have been destroyed. In another case he was called upon to see a child at Kingstown. The mother had left the child in perfect health, but it was subsequently attacked with vomiting and convulsions. His impression was that it was scarlatina, but there had been no eruption or sore throat. In three or four days the whole family were attacked, including a young lady on a visit, who was taken away and died of the disease. He caught the disease himself, and brought it into his family. His wife and servants all got it, and he lost one of his children. For three months no person approached his house. By managing properly and procuring isolation the spread of the disease could be prevented.

The Registrar-General (Dr. Grimshaw) differed from Dr. Jacob in everything he said, being strongly in favour of compulsory notification. Two questions were mixed up which should be separated—one whether there should be compulsory notification of disease, and the other whether the medical man should have any responsibility in directly notifying to the sanitary authorities. That notification would tend to prevent and diminish disease he was certain, and the two instances Dr. Fitzpatrick recounted supported his view. The first was one where he was able to isolate and prevent the spread of the disease. *There* there was no publication. The other was one in a private house. The disease spread, how much it was hard to tell, except that Dr. Fitzpatrick brought it home. That Dr. Fitzpatrick's profits were for a time diminished was an unfortunate circumstance, but if that prevented the public getting the disease, *cadet quæstio!* He had had the disease himself twice in his house. On both occasions he warned his neighbours. The first thing he ordered the

servant to state at the door was that he had scarlatina. No doubt he lost a good deal of money, but he did not regret it; for when he looked back on the terrible infliction to himself, he would not, for all he possessed, have allowed the smallest chance of scarlatina being carried from his house to any one else's house. People complained individually of the losses inflicted on them, but the losses inflicted on others who caught the disease were just as great or greater, and on moral grounds, independent of anything else, nobody had a right to inflict the misery. With regard to the figures brought forward, having read all that had been quoted in some shape or other before, he was bound to say he never could discover anything to show that injury had been produced by the notification of infectious disease. On the other hand, the sanitary authorities, knowing that a particular disease existed in a particular place, could take precautions to prevent its spread, and thereby benefit the community. But where the sanitary authorities were unable to interfere, the disease had spread, destroying numbers of lives, and creating misery among the working classes, who were deprived of every penny they had. He knew of an instance in Christchurch-place where, owing to the authorities not interfering sufficiently early, an epidemic disease spread to five houses, resulting in 4 deaths and 35 cases of typhus fever. Had the existence of the disease been known, and precautions taken in the first instance, there would have been only three or four cases, instead of 35. The loss of a physician's fees was as nothing compared with the loss that those poor people suffered; they were absolutely ruined. Disease broke out in a house in St. Michael's-lane and in another in Christchurch-place, each becoming a centre of half a dozen cases of typhus fever. Take South Lancashire, one mass of houses—if disease broke out in one house it spread to another, and therefore unless the system of notification applied to the whole of South Lancashire and the greater part of Yorkshire it would be worthless.

Dr. Fitzpatrick protested he had made no concealment of the presence of disease in his house, nor was it necessary, the existence of the disease being patent to all his neighbours.

Dr. Cosgrave, having had practical experience of the working of the Act for two years in Huddersfield, pointed out that at least two of the objections urged against it did not amount to anything. One was that the voice of the profession was not heard against the Act. But if found prejudicial by others than dissenters accustomed to air crotchets, no matter how destructive to the health of the population, the voice of the profession would be heard. Although the severity of the Act had been increased in Huddersfield, he did not find his brethren there complain of having to carry out its provisions. During his time it was strictly carried out. But it was quite right that certain cases need not be notified; for instance, where a case can be isolated and treated in the

house. That was a definite common-sense rule obviating any difficulty. With regard to the loss of money, in the majority of cases where the people were able to pay medical men the patients could be treated in their own houses. But it was different with the people who lived in tenement dwellings, who were not a paying class of patients, and if those cases were moved into hospital, as they should be, the dispensary medical officers would have a much easier time of it than at present. As to imposing a penalty, he did not see how the principle differed from that of imposing it for not certifying the disease of which a patient died. He had himself opposed notification in the first instance. The best mode of notification was to hand the form filled up to the person in charge of the case whose duty it was to transmit it, and therefore it could not be said the medical man went behind backs to notify. He thought that preferable to the present mode of direct notification. At the same time he concurred in Dr. Jacob's appeal for an investigation into the working of the Act, the question involved being one affecting the health and life of the population. He believed that notification struck at the root of infectious disease.

Dr. Henry Kennedy inclined largely to Dr. Jacob's views, and regarded the evidence which he adduced as conclusive.

Mr. Edgar Flinn, speaking from experience of the working of the Act in Leicester and Nottingham, believed that a measure for notification of disease would be of no great harm. The system of asking medical men to fill up and send in the forms when a case of infectious disease came within their notice worked very well, and they received a fee of 2s. 6d. During the last two or three months there had been a very serious epidemic of scarlatina raging within a radius of two miles of Kingstown, but no notice had been taken of it by the medical officers of health, of whom there were six or eight in the district. When he inquired what was being done, the answer was a profession of ignorance and a reference to somebody else. He agreed, however, with Drs. Fitzpatrick and Kennedy, of the great hardship of asking medical men to become detectives, and therefore thought that the measure should not be compulsory.

The Chairman avowed himself to be strongly in favour of the compulsory notification of infectious disease. The relation which the profession held to the State, or rather to the people of the country, should be remembered. The licensing bodies were acting under charter, and likewise the universities existed by the favour of the State, and, therefore, anything ordered to be done must be done by the profession, protest as they may. He regretted that Dr. Jacob should have given the character he did to some members of the profession, and he could not believe there were men in the profession who, when they deliberately recognised a case of scarlet fever, would set it down as one of nettle-rash, or

non-infectious disease, or state they did not know what it was. At any rate, whoever did such a thing should be brought under the censure of his college or university, and deprived of his qualifications. A much more unpleasant duty was imposed upon the profession when medical men were asked to certify the cause of death, in which case privilege should be presumed to exist to even a greater extent. Dr. Jacob had drawn purely fancy pictures of the existing state of affairs. He had mentioned that the Act had led to concealment of disease, forgetting that, in towns where it was not in force, greater concealment prevailed. This was notoriously the case in Dublin. Speaking perhaps from a greater experience than Dr. Jacob's of the prevalence of infectious disease and its concealment, he knew it was dreadful. While they meddled and dabbled here and there in tentative experiments, no good would result. What they wanted was a code making notification of infectious diseases applicable to the whole country, rich and poor, but with modifications. A difference would be made in the treatment of rich and poor patients to the end of time. He approved of an inquiry into the subject such as had been held in reference to the Public Health Act.

Dr. Jacob replied.—The Registrar-General had entirely misunderstood his purpose and his views. It was not the notification of the existence of disease to a sanitary authority he deprecated at all, but the proposition that such notification should be effected through the agency of the medical profession; because he held that the beginning and end of the concealment of disease, and the consequent dissemination of infection, would be the exclusion of the medical man once he was forced to act as a detective. The argument of the suffering to individuals he passed by; individuals must ever suffer for the good of the community. Personal loss, therefore, had no element of argument for him, except so far as the individual was induced to conceal disease to avoid that loss—in fact, the whole pivot on which this argument turned was the concealment of disease from the sanitary authority. Where there was a medical man to the fore to give good advice and see it carried into effect, the concealment of disease was of comparatively little importance; but the concealment of disease where there was no medical man in the case was fraught with every element of destruction to the community. Dr. Cosgrave had said that if this grievance were so bad as represented, the medical profession would have spoken out. The profession had spoken out as far as the circumstances allowed. Notification was sought to be imposed in Brighton by smuggling the clause into a harbour bill; but he sent a marked copy to those interested and the bill was defeated. The same observations applied to Edinburgh and other places. Opposition had been given in several instances. But when the Select Committee on Private Bills was struck, it contained a majority in favour of compulsory notification, and so a hearing was refused to Dr. Alfred Carpenter, who offered evidence on behalf

of the profession to show the working of the system failed to produce the results aimed at, the reason assigned being that no evidence could be heard except from the towns to which the bills related. Therefore, it was not to be said the judgment of the profession had been heard or pronounced. Death certificates were utterly fallacious, and concealment was the practice wherever the incentive existed—for instance, syphilis and delirium tremens were represented by such euphemisms as spinal irritation, urinary disease and debility; and often certificates were given, not for the disease which actually killed the patient, but for the symptoms, and the true cause of death was assigned only in the case of paupers. He affirmed that the Acts which had been working for seven, eight, or nine years in twenty-two towns had utterly failed to produce any amendment of the public health, and, therefore, he asked the Academy to take a prominent position to prevent the further extension of the system.

The sub-section then adjourned.

SURGICAL SECTION.

President—E. H. Bennett, M.D., President and Fellow of the Royal College of Surgeons, Ireland.

Sectional Secretary—William Stokes, F.R.C.S.I.

Friday, May 22, 1885.

The President in the Chair.

Living Specimen.

Mr. Edgar Flinn—Case of excision of knee-joint.

Specimens by Card.

Mr. Thornley Stoker—A scapula removed for necrosis. Mr. L. Hepenstal Ormsby—Vesical calculus removed by lateral lithotomy. Mr. Wheeler—(1) Parts removed in excision of the knee. (2) Tongue removed for epithelioma. (3) Foot removed for carious disease. Mr. Stokes—(1) A splint for the after-treatment of excision of the knee-joint. (2) Sarcoma testis. (3) Parotid tumour. (4) Tongue removed by écraseur for epithelioma. Mr. Edgar Flinn—Hypertrophy of nail of right large toe. Mr. Thomson—Feet removed by Syme's method.

In reply to Dr. Henry Kennedy,

Mr. Stokes said that Mr. Abraham, having examined the tumour, and made microscopical preparations of it, would give the information sought as regards its histology.

MR. ABRAHAM observed that though he had made sections of the tumour, he had not yet examined it carefully; but as far as he could make out, there was tubercle in the gland, and also some remains of the parotid gland substance, besides a large quantity of lymphoid tissue, possibly belonging to a neighbouring lymphatic gland.

Treatment of Stricture by Internal Urethrotomy.

MR. THORNLEY STOKER read a paper on the treatment of stricture by internal urethrotomy. [This paper appeared in the Number of this Journal for June, 1885, Vol. LXXIX., page 470.]

The PRESIDENT believed most surgeons would concur in Mr. Stoker's opinion that internal urethrotomy should replace the forcible laceration of the urethra. For his own part, he would not incur the risk of dealing with stricture by forcible rupture. He inquired the grounds upon which Mr. Stoker preferred the section on the pubic side of the urethra to that on the floor of the urethra—in other words, his reasons for asserting that the upper tissues were healthy, while the lower were diseased. One of the advantages of Civiale's instrument was that the surgeon could divide with it either above or below.

DR. BARTON regarded the subject as having special interest since his early days, when he had the benefit of the teaching of Hutton, who was a skilful director of the catheter, and conducted all operations of the urethra with elegance and precision. Contrary to Mr. Stoker's view that gradual dilatation was a temporary measure, and in the ultimate result unsatisfactory, his own experience was that it was the best treatment, if it could be adopted; and year by year, as he treated more difficult cases, he found its scope and range greater than he at first supposed. Indeed, he was convinced there was but a limited number of cases that could not be treated by gradual dilatation, if only the surgeon possessed patience as well as dexterity. The patient and gentle use of the bougie and cathether would overcome almost all the complications which the disease presented; and as to the ultimate result, he believed that if the treatment were carried sufficiently far, it would leave as permanent a result as any other means yet discovered. In the case of a gentleman who returned to this country after ten years' absence, he passed a No. 8 instrument easily; and in the case of a medical gentleman whom he treated for a very tight stricture, he found it remained perfectly open after six years. Therefore, gradual dilatation gave as great an amount of permanence as any other method, and internal urethrotomy would not give as good. Again, despite Mr. Stoker's remark that internal urethrotomy was not a dangerous procedure, he had seen fatal results follow. He agreed, however, that that method gave more rapid results, but not more permanent. There were cases in which gradual dilatation could not be adopted, and in which the surgeon had to choose

between bursting and internal urethrotomy. His choice in such cases would be in favour of internal urethrotomy. Both were open to risk, and could not be compared with dilatation. Again, there were other cases requiring external urethrotomy. In every case, before selecting any other method of treatment the surgeon should sedulously, carefully, and tenderly try gradual dilatation.

Mr. Stokes said the subject was one which for a number of years had engaged his attention. In 1864 he introduced into Dublin Maisonneuve's operation, which he had learnt from that distinguished French surgeon. Although Mr. Stoker was apparently unaware of the fact, he had published papers in the *Medical Press*, the *Dublin Journal of Medical Science*, the *British Medical Journal*, and other periodicals, in which he fairly put forward the alleged advantages of that operation. Speaking from an experience of sixty-seven cases during the past twenty-one years, although his opinion of the operation was still very high, he did not think it should be looked upon in the light of Mr. Stoker's paper as a royal road to the cure of urethral stricture. It was the best mode of internal division of the stricture. But he agreed with Mr. Barton that the chances of recurrence of the disease were not greater after the old and the safer treatment of gradual dilatation. Mr. Stokes also thought it better to retain a catheter in the urethra for some time after the operation, otherwise the recurrence of the stricture was, as a rule, rapid. That was also the opinion of Maisonneuve. In reference to the mode of division, he agreed with Mr. Stoker in thinking the upper wall of the urethra was the best to be divided, not only for the reasons he put forward, but also those of Maisonneuve, that there was much less danger of any lodgment in the urethra, or of any infiltration taking place after the operation, when the upper wall was divided than when the lower one was. By passing in a large well-oiled bougie immediately afterwards the sides of the wound were dilated, assuming a triangular or conical form, with its base below and apex above. This became filled with lymph, and a wedge-shaped cicatrix formed, which was not at all so likely to take place if the wound was allowed to close after the division of the stricture. Notwithstanding the favourable results he had had, out of the sixty-seven cases there were only ten in which he was able, after a considerable period, to determine that no recurrence of the stricture had taken place. He had performed the operation on the same individual twice, and yet there was a recurrence of the stricture, which he subsequently treated by gradual dilatation. He believed with Mr. Barton that although dilatation was the most tedious, it was certainly the safest method; and he also agreed with him, with Hutton, and with Prof. Smith, in maintaining that there was a better chance of absorption of the new material by the steady, continuous, gradual pressure caused by the frequent introduction of the instrument than by any cutting operation whatever. It was dangerous

to advocate the operation of internal urethrotomy to the exclusion of the slower and safer method of gradual dilatation. But he certainly endorsed Mr. Stoker's observations in reference to the great superiority of internal division over the immediate dilatation of Perréve or Holt, done with the instrument devised by the late esteemed Secretary of the Surgical Society, Mr. Richardson. In his communications he had given his reasons for considering the internal division of the stricture superior to and more scientific than the rude tearing open of the urethral stricture—a method which gave rise necessarily to a lacerated wound in the urethra, the length, depth, and extent of which the surgeon knew not.

Mr. Ormsby observed that Mr. Stoker deserved thanks for bringing before the Section such a practical subject. He had himself performed all the operations described—the gradual dilatation, the forced, the internal urethrotomy, and the external. The treatment depended more on the patient than on the stricture, some being suitable for one and some for another method. Every surgeon agreed that gradual dilatation, where it could be performed, was the best method. But if the patient wanted to have the treatment carried out rapidly and efficiently, internal urethrotomy with Maisonneuve's instrument afforded the best result. Mr. M. Colles had stated that all strictures were liable to return. As an instance, he mentioned, in his own practice, the case of a man who had had Holt's operation performed at one hospital, Richardson's at another, and Maisonneuve's at the Meath. It was, therefore, probable, no matter what method was adopted, that the stricture would recur if the patient did not take the precaution either of going at once to a surgeon, or of providing himself with a bougie to pass occasionally. He agreed with Mr. Stokes as to the advantages ascribed to Maisonneuve's method, especially in preventing the urine coming into contact with the fresh cut surface. He performed the operation without an anæsthetic.

Dr. Ball pointed out that in the use of Maisonneuve's instrument there was danger of injuring other portions of the urethra by the sharp edge of the knife. He knew of a fatal case in which the *post mortem* examination showed that the entire length of the urethra, from the meatus to the bladder, was slit with the instrument, the wound being deepest in the healthy parts. That danger, however, was obviated by a modification invented by Tevan, of London—namely, a triangular sheath over the cutting edge.

Mr. Corley spoke from twenty-seven years' experience, since he was a pupil of the late Mr. Taggart, who was a thorough advocate of gradual dilatation as the safest method, and was so particular and careful that he would have the word "gentleness" inscribed on the handle of every catheter that the junior practitioner used. When he was first attached to Jervis-street Hospital divulsion or bursting was fashionable; and though he never saw a fatal result from it, he knew that fatal results

had occurred. The fact that a fatal result sometimes followed a particular operation he regarded as of little importance, since he knew it to occur following gradual dilatation; and Murray Bradwood's book gave, as a common sequence to passing the catheter, urethral fever, catheter fever, pyæmia, and septicæmia. For the same reason, he took exception to Mr. Stokes' caution about passing the catheter in the surgeon's study. When he came to the Richmond Hospital, he found the cutting operation which was introduced by Mr. Stokes most favoured. With his experience of the three methods, he had come seriously and fairly to the conclusion that the cutting operation, as done by Maisonneuve, was the best and safest, and obviated a number of inconveniences that certainly belonged to gradual dilatation. There were several cases met with in which a long period of trial occurred before getting in the catheter; for instance, one in the Richmond Hospital, given up as hopeless after six weeks, when Mr. Stokes succeeded in introducing a catheter. The cutting method was rapid for the patient, satisfactory to the surgeon, and as free from danger as any other.

Mr. Thomson said the real question to decide was whether stricture was curable, or, rather, how near could they approach to the condition of getting rid of the possibility of its return. All the speakers agreed that strictures returned, whether the operation was one of cutting or of bursting, although some surgeons had invented appliances which they claimed cut the strictures so as to prevent their return. His own experience was that under all modes of treatment strictures returned. Hence the question was—What method of dealing with the stricture would give the best approximate result short of absolute cure? Mr. Stoker had been wrongly taken up. He did not advocate internal urethrotomy, or any other form of division of the stricture in all cases. The twenty-five cases of internal urethrotomy were not all the cases Mr. Stoker had treated, and he had certainly treated others by the gradual dilatation method. Therefore, Dr. Barton and Mr. Stoker were probably at one as to the merits of that treatment. There were cases capable of treatment by the gradual dilatation, and others which must be cut. Mr. Corley had stated an important point—that they were not to consider gradual dilatation as a method altogether free from risk. He had himself seen a patient who, on the introduction of a catheter, was seized with uræmic convulsions, and died of suppression of urine. The same happened after internal urethrotomy in a case of his own. Therefore, they were not to base objection to a line of treatment on the fact of a death occurring now and again. But the question was this—When the surgeon came to deal with a case of stricture, what method was the best for the patient; what gave the least risk; and what gave the best chance of staving off the evil day? In the great majority of cases dilatation was that method. It was essentially the least irritating, if properly carried out. By using a

cutting instrument a severe wound was inflicted upon a very sensitive part, with the risk of setting up irritation of the sympathetic, which so often followed cutting operations. Hence the advantage of gradual dilatation. But there were cases in which no amount of gradual dilatation was satisfactory. The stricture might be dilated one day, but in a few days afterwards it would be found to have come back to the starting point. Again, when a catheter was introduced for the dilatation of the stricture, the patient was liable to be seized with rigors, there being great constitutional disturbance and the probability of catheter fever. There was another form of stricture which might be dealt with by urethrotomy, internal or external, as not usually yielding to gradual dilatation—namely, traumatic stricture. So, too, a case suffering from rigors after the bougie would be well treated by internal urethrotomy, no greater disturbance being caused than by the passing of the bougie. At the same time, he agreed with Dr. Barton, that for the majority of cases gradual dilatation was the method that ought to be adopted, and that questions of the mere convenience to the patient or the surgeon ought not to be taken into consideration where it was a question of a man's life whether a dilating bougie or a cutting instrument should be used. However, in discussing methods of cutting, he was entirely in favour of Maisonneuve's.

Mr. Wheeler, referring to Mr. Stoker's remark that the reasons why in Dublin immediate dilatation was adhered to might be found in the revulsion of feeling against the earlier forms of urethrotomy, or to the possession of the late Mr. Richardson's modification of Holt's dilator, did not think that the instrument modified by that erudite surgeon either prevented or retarded the adoption of internal urethrotomy. He reminded Mr. Stoker that when a colleague of his some years ago, in the City of Dublin Hospital, he had performed internal division in two cases. There was no comparison in the cases suitable for Syme's section, which the author referred to, and those suitable for internal urethrotomy. He took exception to the statement made on the authority of Sir Henry Thompson (whom he never quoted unless his own experience verified the treatment advocated) that the surgeon could not reach a series of strictures through perinæal section; and as examples to the contrary, he took two cases out of many. A gentleman returned from the Cape with eight or nine urethral perinæal fistulæ, who was represented to have had Syme's operation performed on him in the colony; but the urethra had never been opened, while the scrotum, no doubt, had been split, and each testicle could be pulled away, one from the other, to the opposite thigh. Two of the strictures he divided by Syme's method on the staff, and the third on a director passed into it. He did not find any difficulty in treating these strictures through the perinæum. In the second case four strictures existed, one being at the orifice from a traumatic cause. The

patient had extravasation of urine; but without difficulty he treated the strictures through the perinæum. Both cases made good recoveries. In the first a No. 9 catheter was used by the patient, and in the second a No. 10 had been frequently passed. Although it might seem from the tenor of the paper the author advocated only one operation, yet Mr. Stoker had distinctly stated he did not wish it to be understood that he had relinquished gradual dilatation. There were some cases suitable for gradual dilatation, some for perinæal section, some for internal urethrotomy, and some for the much-abused forcible dilatation. Recent cases were suitable for gradual dilatation, but old callous strictures were not. He could not concur in the statement that the return of contraction was more rapid after divulsion than after internal division. When there was rapid contraction it was because there had not been sufficient dilatation by which the stricture would be fairly ruptured. He spoke from personal experience of the operation, having had several cases. Contraction did not recur more rapidly after this treatment than after internal urethrotomy, of which he also had experience, Civiale's operation being the one he performed. He agreed with Mr. Stoker that it was injurious to tie in a catheter. It was quite clear that gradual dilatation should be practised whenever possible, but the surgeon must select for himself the method most suitable in each case. He was not aware that a cicatrix was formed after Maisonneuve's operation, as had been stated, nor did he think a cicatrix would form after an internal urethrotomy, if properly cut. Contrary to the experience stated, he had himself dilated a traumatic stricture in a patient, a native of Roscommon, in the City of Dublin Hospital, into whom, on his admission, a No. 1 catheter could not be introduced, but who now passed a No. 8 for himself.

Dr. Falkiner suggested that a drug recently brought before the profession—namely, cocain—should be injected into the urethra before operating, instead of placing the patient under an anæsthetic.

Mr. Hamilton said Mr. Stoker had not removed from his mind two convictions impressed upon it by observation and practice—one, that a stricture once formed could never be removed; and the other, that far and away the vast majority of strictures were amenable to, and ought to be treated by, the process of gradual dilatation. He was in the habit of teaching his class, and telling the patients, that no matter what plan was adopted the stricture would return. His experience was, that he was able to succeed with gradual dilatation in ten days or a fortnight. The object was to get in an instrument first, no matter how small; and he maintained, with Syme, that there was no stricture through which a surgeon could not pass an instrument, if he only had the patience, and, above all things, gentleness. He always held and taught that blood on a catheter or bougie was a disgrace, as indicating that too much violence had been used. His practice was, when he got a puzzling case of

stricture, to go on Sunday, and, kneeling on a soft pillow beside the patient's bed, make up his mind not to leave till he had passed the instrument, and very rarely had he failed. Having succeeded in passing in ever so small an instrument, he left it there for the night, and found that in the vast majority of cases it was no inconvenience, if the patient was kept under the influence of small doses of opium. Next morning he found the instrument perfectly loose, and he could, without difficulty, pass in one a size or two larger. He then went on increasing it, size after size, but not too rapidly, so as not to set up rigor by too much disturbance, and, finally, he gave Mr. Stoker's advice about the clock and the catheter on Saturday night.

MR. THOMSON asked that Mr. Wheeler, who seemed to dissent from Mr. Stokes' view as to the healing of a wound in an internal urethrotomy, should state how the wound did heal, if a cicatrix was not formed.

MR. WHEELER said he stated it as his opinion that it heals by means of healthy tissue. When the urethra was cut into, healthy tissue formed in the stricture already cut, but certainly not a cicatrix.

MR. ORMSBY—What is it?

MR. WHEELER—Healthy material; healthy tissue is produced.

The PRESIDENT—Do you mean to say the cicatrix is diseased material?

MR. WHEELER—No; but I say it is material that would be likely to contract again. What I mean is, that it is not contractible cicatricial tissue that is produced.

MR. THORNLEY STOKER replied. He said his paper read over again would answer most of the objections raised, and therefore he would leave it to answer for itself. In reply to the President's question, he advocated the incision of the roof of the urethra in preference to the floor, because he considered he was cutting into healthier tissue. It was matter of observation to those who dissected diseased urethræ that the floor was much more frequently the seat of disease than the roof. That gradual dilatation was the safest method of treatment no man of common sense could for a moment deny, or that it was the method applicable to the greater number of organic strictures. But he contended that urethrotomy might be more generally practised than at present. He was familiar with Mr. Stokes' writings, and especially his paper published in 1871; but he considered that internal urethrotomy was more advanced now than Mr. Stokes supposed. He denied having spoken lightly of the dangers of the operation, or that he operated off-hand in his study. What he did was after careful examination of the urethra—a procedure enjoined in Sir Henry Thompson's teaching. Dr. Ball had referred to a well-known case where the whole of the urethra was split up; but there was no operation that was not subject to accident, and the fact that there was only one record of the kind showed that urethrotomy was a comparatively safe operation. He could not follow Mr. Hamilton's practice,

his experience being that when an instrument was left in, troublesome rigors and uræmic fever were set up, and consequently he left continuous dilatation out of his practice altogether.

The Section then adjourned.

PATHOLOGICAL SECTION.

President—A. W. Foot, M.D.
Sectional Secretary—P. S. Abraham, F.R.C.S.I.

Friday, May 15, 1885.

The President in the Chair.

Mr. P. S. Abraham, Honorary Secretary, read the report of the Committee of Reference, relating to four specimens which had been referred to the Committee.

So-called "Malignant" Growths.

Mr. Foy read a paper on so-called "malignant" growths. Cancers are genetically identical with all other tumours. The division according to the embryonic layers is clinically useful but not a natural classification. The name "malignant" is inapplicable to cancers, being originally used to denote diseases supposed to be due to the indwelling of a malignant spirit. Cancers are purely local in origin, and are the result of an attempted hypertrophy, in which multiplication without evolutionary specialisation results—the mass consisting of segregated animal plasma, in which the influence of the immediate environment is greater than the hereditary tendency to specialisation. The characters of cancer are explainable by the ordinary physiological life of amœbæ. Specialisation of tissue is characteristic of the higher animal and vegetable organisms. The regulating power that presides over specialisation of cell elements in the body being either in abeyance or lost, any irritation will produce a tumour, and just so far as the tendency towards specialisation so far will it be of an embryonic type.

The President observed that during the last two years the ætiology and natural history of cancer had occupied the attention of the Pathological Society of London, and he thought anyone who had studied their discussions on the subject would see that not very much had been gained. The Section at that period of the session could hardly enter on the ætiology of cancer.

Mr. Abraham asked did Mr. Foy think the tumour he last excised was a secondary infiltration of the glands of the neck. The one which occurred first under Dr. Ball's treatment was in the nose.

Separation of the Upper Epiphysis of the Femur.

Mr. Kendal Franks showed the upper extremity of a femur removed from a girl, aged eleven, who had been admitted to the Adelaide Hospital, and whose right hip-joint he excised on the 24th of March last. The history of the case showed that the patient, whilst standing on a wall about three feet high, in the summer of 1884, had been pulled backwards by a school-fellow, and had fallen on her back. After the fall she had been able to walk home, a distance of one and a half miles. Early in December some neighbours noticed that she walked lame. Shortly before Christmas last she fell backwards across a narrow and shallow drain and got her clothes wet, but does not seem to have hurt herself by the fall. Three or four days later she began to complain of pain and stiffness in the thigh, groin, and hip. Five days later Dr. Quirke, of Piltown, was sent for, as the girl was observed to be "romancing." He found her to be suffering great pain, with much swelling about the hip, a temperature of 103°, furred tongue, and much prostration. Thinking it might be a case of acute rheumatism attacking the joint, he prescribed salicylate of soda, which had the effect of lowering the temperature, but the pain rather increased. He then diagnosticated the case to be one of morbus coxæ, and advised her removal to Dublin. When examined in hospital under ether, it was found that the limb was one-fourth of an inch shorter than the left, and that it measured two and a half inches more round the great trochanter. Extension and flexion could be easily accomplished, and occasionally a curious grating was detected in the joint. It was determined to open the joint freely, and, if necessary, to excise. On cutting down on the trochanter some pus welled up from beneath the periosteum, which was detached from the outer and posterior portion of the femur for about two inches in the axis of the shaft. On opening the joint a large quantity of uncoagulated dark blood was evacuated. The head of the bone was found lying loose in the cavity of the joint, hard and completely devoid of cartilage. The upper extremity of the neck was also devoid of cartilage; it was hard and rough, but in one spot was soft and gritty. The neck of the bone and upper part of the shaft showed evidences of old-standing disease. There was no pus found in the joint. The cavity of the acetabulum was roughened, very hard, and had been completely stripped of its cartilage. The author considered that the starting-point of the mischief was the original fall last summer; that an epiphysitis had been started, which gradually spread to the joint; that this had caused necrosis of the head of the bone. Whether the head had become separated previous to the second fall before Christmas, or whether the final separation had taken place as a result of the fall was open to question, but he considered that the presence of blood in the joint favoured the latter view. Separation of the epiphysis of the upper end of the femur was

not very common, and hence he thought the specimen worthy of being brought before the Pathological Section.

Sarcoma of the Jaw.

MR. ABRAHAM exhibited two specimens of new growths of the lower jaw, which were excised by DR. P. C. SMYLY at the Meath Hospital. One was a rapidly-growing, spindle-celled sarcoma, which first appeared six months before removal, and returned very shortly after the operation. The neoplasm had completely invaded and softened the bone, so that an incision could be made without resistance quite through the jaw. From the microscopic appearances, and on other grounds, the theory was put forward that the sarcoma cells had their origin from the interstitial cells of the old bone. The second tumour was an example of a slow-growing, ossifying sarcoma.

Tubercle of the Tonsils.

A very large tonsil excised from a young woman by DR. P. C. SMYLY was also exhibited by MR. ABRAHAM. Although the patient had a somewhat strumous appearance and swollen glands in the neck, there were no symptoms whatever of lung disease, cough, nor any affection of palate, fauces, or larynx. The other tonsil was similarly affected. The microscopic sections exhibited typical tubercle and commencing caseation. Attention was called to the scanty literature that exists in regard to tubercle in the tonsil; and it was suggested that its supposed rarity was perhaps in consequence of its not having been looked for. Considering that adenoid tissue elsewhere is a favourite site for tubercle, the latter may be expected to appear occasionally in and among the lymphoid follicles of such a gland as the tonsil.

The PRESIDENT said the microscopic sections showed the presence of tubercle in the preparations. The specimen was one of great rarity, for next to the ovaries there was no region in which tubercle was less likely to occur than the tonsils. This was hard to explain, as the tonsil was the largest mass of adenoid tissue in the body, and the relation of tubercle to adenoid tissue was known. No doubt, it was possible that tubercle might be found in tonsils if looked for. Enlargement of the tonsils was related to the strumous diathesis, and tuberculosis was also undoubtedly connected with it.

MR. KENDAL FRANKS observed that about two years ago the question was ably and hotly discussed in America as to whether such a thing as primary tuberculosis of the larynx could exist; and it was decided in the end that primary tubercular disease of the larynx was perfectly possible, and that it frequently occurred. But the question had not been discussed as to whether primary tubercular disease could occur in the tonsils independently of any lung affection. The paper which had been

read stated that the patient had not any affection of the lungs at the time, or since developed it. A case recurred to his mind which, two or three years ago, he brought before the Biological Club. A young man consulted him for follicular disease in the tonsils and back of the throat. On examining him he found the follicles in the back of the pharyngeal wall filled with a yellowish, white, cheesy matter, while the larynx was perfectly healthy. The tonsils were comparatively small, but the crypts in the tonsils contained the same cheesy matter. There was no evidence whatever of disease of the lungs. He had the young man under treatment for a little time, and then lost sight of him. A short time ago he saw him again, and found him in an advanced stage of phthisis. The history of that case showed it to be one of primary tubercular disease in the follicles of the pharynx, tonsils, and root of the tongue. His experience of cases of phthisis was, that there was seldom one in which there were not appearances in the larynx to indicate that the lungs were engaged, such as œdema in the folds of the mucous membrane; he had seen these laryngeal appearances so frequently in phthisis that he looked on the former disease as a concomitant sign of the latter. In the case recorded in the paper there was nothing of the kind. It was a matter for investigation whether cheesy tonsils were evidence of tubercular disease. He could not agree with the commonly-held opinion that enlarged tonsils were evidence of strumous disease. He had seen so many otherwise healthy people, who showed no delicacy of any kind after the excision of large tonsils, that he could not look on the latter as evidence of strumous disease.

Dr. Henry Kennedy said his experience was against struma of the lungs and of the tonsils existing together. On the contrary, he regarded tonsils enlarged on both sides as indicative of something which was the antipodes of phthisis. Such tonsils occurred, as a rule, in overfed children. Anyone who looked at the throat of a person who had phthisis would never find the tonsils enlarged, though it might be diseased in other ways. It was uncommon to find tubercular disease and large tonsils existing together. The question as to tubercle occurring primarily in the tonsils was one of importance. The strumous diathesis which had been alluded to did not go, in his opinion, with enlarged tonsils.

Tape-Worm.

Mr. M. A. Donnelly made a communication on two different kinds of tape-worm occurring in the one subject.

The patient was a waiter, middle-aged, who had never been out of the country. He had suffered from tape-worm for many years. After a large dose of male-fern, the two specimens exhibited came away together. One was a "Tænia mediocancellata," the other a "Bothriocephalus latus."

Mr. Donnelly added that he could not understand how it happened

that in these cases from twenty to forty feet of the parasite may be passed dead, while the head and upper portion remained alive and reproduced the worm.

The PRESIDENT said the Section were much indebted to Mr. Donnelly for these rare specimens. The early history of the patient had an important bearing on the case. It was well known that the bothriocephalus latus came primarily from fish. If the germ were eaten by a dog or cat it did not develop, but if it got inside a human being it developed into the parasite in question. Its occurrence was very common amongst those inhabitants of Russia, Poland, and Finland who were much in the habit of eating smoked salmon; though the brandy which they generally took after it probably killed some of the germs. He had a specimen of the worm which was passed by a polar bear. It was known that that animal preferred the salmon to any other fish. The tænia mediocancellata was the beef-worm—the ordinary tape-worm came from pigs.

MR. FOY said he lived for some years in Enniskillen, and discovered that the inhabitants of the town and districts adjoining the lake were extremely subject to worms, and also to rheumatism and cancer.

MR. ABRAHAM observed that the bothriocephalus latus was a very rare worm in the British Islands. Most of the cases recorded of its occurrence in London were those of individuals who had lived in Russia or Switzerland. He had looked at the specimens in the Museum, and found that they were all the tænia mediocancellata. One was labelled "tænia solium," but he believed that was an error.

The Section then adjourned to that day month.

BELLADONNA AS A MEANS OF PRODUCING TOLERATION OF IODIDE OF POTASSIUM.

FROM observation of the fact that belladonna produces dryness of the throat, mouth, and nose, Dr. P. Aubert got the idea of employing empirically this agent, in order to combat certain disagreeable effects of iodide of potassium. In three well-marked cases of naso-pharyngeal intolerance, the administration of belladonna with the iodide gave good results. The same success was obtained in the case of a young man suffering from acute iodism, the symptoms disappeared by preceding the ingestion of the iodide with extract of belladonna. In this case, the dose of belladonna was a pill containing 5 centigrammes given twice a day, night and morning. In one of these cases, after the belladonna had been continued for several days, it was suspended, and the iodide was still employed without a supervention of the intolerance.—*Journal de Méd. et de Chirurgie*, May, 1885, *and Journal of Cutaneous and Venereal Diseases*, Vol. III., No. 9.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P., F. R. Met. Soc.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, August 15, 1885.

Towns	Population in 1885	Births Registered	Deaths Registered			Deaths from Seven Zymotic Diseases							Deaths from Phthisis	Death-rate per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		From all causes	From seven Zymotics
Dublin,	353,082	730	579	105	107	–	12	12	1	4	15	19	88	21·4	2·3
Belfast,	219,222	583	464	112	48	–	38	9	1	18	4	31	80	27·6	6·0
Cork,	80,124	171	123	14	32	–	–	1	–	3	2	6	17	20·0	1·9
Limerick,	38,562	80	84	8	24	–	–	2	–	3	–	4	9	28·3	3·0
Derry,	29,162	65	43	7	4	–	–	–	–	–	–	4	7	19·2	1·8
Waterford,	22,457	54	24	–	6	–	–	1	–	–	–	3	4	13·9	2·3
Galway,	15,471	32	21	4	2	–	–	–	–	–	–	–	4	17·7	–
Newry,	14,808	26	13	–	2	–	–	–	–	–	–	1	–	11·4	0·9

Remarks.

In the eight selected towns included in the foregoing Table the highest death-rates are 28·3 per 1,000 of the population annually in Limerick, 27·6 in Belfast, 21·4 in Dublin, and 20·0 in Cork; the lowest rates are 11·4 in Newry, 13·9 in Waterford, 17·7 in Galway, and 19·2 in Derry. The rate of mortality from seven chief zymotics ranged from 6·0 per 1,000 per annum in Belfast, 3·0 in Limerick, 2·3 in Dublin and Waterford, 1·9 in Cork, 1·8 in Derry, and 0·9 in Newry to *nil* in Galway.

The recorded deaths represent a rate per 1,000 of the population annually of 20·7 in twenty-eight large English towns (including London, in which the rate was 21·0), 21·8 in the sixteen chief towns of Ireland, 23·9 in Glasgow, and 15·9 in Edinburgh. There is a marked increase (from 18·4 to 20·7) in the mortality in the English towns generally; in London it has risen even more perceptibly, namely, from 18·1 to 21·0 per 1,000 per annum. As a matter of fact, however, the mortality at

first rose, and then fell steadily week by week in the metropolis, the weekly rates being 20·9, 22·4, 20·0, and 18·8. The death rate rose in Glasgow (from 22·0 to 23·9). In Edinburgh it rose slightly (from 15·2 to 15·9). In the Irish towns the rate of mortality has once more fallen decidedly, from 24·1 to 21·8. If the deaths (numbering 15) of persons admitted into public institutions from localities outside the Dublin Registration District are deducted, the death-rate of that district becomes 20·8, while that of the portion of the district included within the municipal boundary is 22·7 per 1,000 per annum. In London the epidemic of smallpox happily shows a continuous decrease—the deaths were 63, compared with 105, 193, 239, 179, 109, 197, and 229 in the seven preceding periods of four weeks each. The weekly number of deaths from this disease since the beginning of the year have been 56, 42, 70, 58, 59, 60, 56, 44, 37, 27, 35, 23, 24, 39, 40, 49, 51, 48, 66, 75, 50, 55, 62, 39, 37, 28, 39, 23, 15, 18, 16, 14, and 15 respectively. The deaths from diarrhœal diseases in the same city, which numbered 54, 51, 52, 78, and 415 in the five preceding periods of four weeks each, were 1,163. To this must be attributed the higher death-rate of the metropolis.

Acute febrile zymotics were returned as the cause of death in 75 instances in the Dublin district, compared with a ten-years' average of 100·4 in the corresponding period and 113 in the previous four weeks. The 75 deaths included 12 from measles, 12 from scarlet fever, 15 from "fever," 4 from whooping-cough, 19 from diarrhœal diseases, and one from diphtheria. There was no death from smallpox. The epidemic of scarlet fever shows a marked decline, the deaths being 8 fewer than in the previous four weeks. Of the 15 deaths referred to "fever," 5 were ascribed to typhus, and 5 to enteric fever, while in 5 instances also the exact nature of the fever was either not specified or was ill-defined. The deaths from fever were 11 fewer than those registered (26) in the previous four weeks. Four children aged between one and five years succumbed to scarlet fever, and two victims to this disease were under one year old. The deaths from whooping-cough fell from 15 in the previous four weeks to 4. Of the 4 victims of whooping-cough 3 were between one and five years of age, but no infant of less than twelve months old died of this disease.

The fatal epidemic of cerebro-spinal fever recently noticed in some of the southern suburbs of Dublin shows a continued decline. Six deaths were referred to this disease, against 10 and 18 in the two previous periods of four weeks each.

Measles caused 38 deaths in Belfast, compared with 88 and 162 in the two preceding periods, and 12 in Dublin. In Waterford the epidemic of this disease has died out; but in Dublin and Belfast it is still prevalent, although decreasing quickly. Since the beginning of the year the weekly numbers of deaths in Dublin have been 3, 3, 3, 5, 3, 5, 10, 11,

8, 10, 11, 16, 12, 13, 19, 15, 15, 17, 12, 14, 17, 13, 9, 11, 6, 7, 3, 4, 3, 3, 3, 2, and 4 respectively. Of the 12 victims to the disease, whose deaths were registered in the four weeks, 10 were under 5 years of age, including 4 infants of less than twelve months.

Scarlet fever was fatal in 9 instances in Belfast, in one case in Cork, in 2 cases in Limerick, and in one case in Waterford. Diarrhœal diseases were credited with 68 deaths in the eight towns, compared with 18, 27, 32, and 30 in the four previous periods of four weeks. In London the weekly registered deaths from diarrhœal diseases were 284, 384, 309, and 222 respectively.

In the Dublin Registration District 730 births and 579 deaths were registered, compared with 763 births and 723 deaths in the previous four weeks. The births were those of 384 boys and 346 girls. The deaths of infants under one year were 105 against 109 in the previous four weeks; those of persons aged 60 years and upwards were only 146, compared with 161 in the previous period.

The deaths referred to pulmonary consumption in the eight towns were 209, compared with 213, 243, 277, 252, 270, 244, and 239 in the seven preceding periods of four weeks each. In Dublin diseases of the respiratory organs are stated to have caused 65 deaths, against an average of 80·3 in the corresponding four weeks of the previous ten years, and compared with 117, 120, 177, 207, 246, 225, and 213 in the seven preceding periods of four weeks each. The 65 deaths included 40 from bronchitis (average = 49·2) and 21 from pneumonia (average = 15·5). Of the 40 persons who succumbed to bronchitis, 5 were infants under twelve months, whereas 12 had passed their sixtieth year.

On Saturday, August 15, 1885, there were under treatment in the principal Dublin hospitals 2 cases of smallpox, 3 of measles, 25 of scarlet fever, 12 of typhus, 14 of enteric fever, and 3 of pneumonia.

The mean temperature of the four weeks was 59·0° in Dublin, 56·9° in Belfast, 59·3° at Roche's Point, Co. Cork, 58·2° at Glasgow, 58·0° at Edinburgh, and 62·2° at Greenwich. The minimal readings of the thermometer in the screen were 41·2° in Dublin, 40° at Belfast, 45° at Cork, 37·0° at Glasgow, 40·5° at Edinburgh, and 40·2° at Greenwich. The maximal temperatures were 77·0° in Dublin, 70° at Belfast, 75° at Cork, 80·0° at Glasgow, 82·2° at Edinburgh, and 90·2° at Greenwich.

The weather was again, for the most part, favourable. Great heat prevailed during the earlier part of the period, while the latter part was cool and changeable, with heavy thunder-rains in the third week.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of August, 1885.

Mean Height of Barometer, - - -	29·992 inches.
Maximal Height of Barometer (on 14th at 9 a.m.) -	30·324 „
Minimal Height of Barometer (on 10th, at 9 a.m.),	29·246 „
Mean Dry-bulb Temperature, - - -	56·6°.
Mean Wet-bulb Temperature, - - -	54·0°.
Mean Dew-point Temperature, - - -	51·5°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·383 inch.
Mean Humidity, - - - - -	83·3 per cent.
Highest Temperature in Shade (on 17th), - -	71·4°.
Lowest Temperature in Shade (on 14th), - -	41·2°.
Lowest Temperature on Grass (Radiation) (on 14th),	33·0°.
Mean Amount of Cloud, - - - -	53·1 per cent.
Rainfall (on 14 days), - - - -	3·050 inches.
Greatest Daily Rainfall (on 4th), - - -	1·719 inches.
General Directions of Wind, - - -	E.N.E., N.

Remarks.

A very cool, changeable month, periods of broken and of settled weather occurring in marked contrast, and an unusual preponderance of winds from "polar" quarters. More than half the rainfall (56·3 per cent.) was measured on the 4th, and the rainy days were only 14, compared with an average of 15·5, so that the month, although cold, cannot be considered as a wet one.

The mean height of the barometer was 29·992 inches, or 0·088 inch above the average value for August—namely, 29·904 inches. The mercury rose to 30·324 inches at 9 a.m. of the 14th, and sank to 29·246 inches at 9 a.m. of the 10th. The observed range of atmospherical pressure was, therefore, 1·078 inches—slightly less than an inch and one-tenth. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 56·6°, or 4° below the value for July, 1885; that calculated by Kaemtz's formula from the means of the daily maxima and minima was 55·9°, or precisely 3° below the average mean temperature for August, calculated in the same way, in the twenty years, 1865–84, inclusive (58·9°). The arithmetical mean of the maximal and minimal readings was 57·1°. On the 17th the thermometers in the screen rose to 71·4°—wind N.W.; on the 14th they fell to 41·2°—wind also N.W. The minimum on the grass was 33·0° on the 14th. The past month was colder than any August in the preceding twenty years, the nearest approach being in 1881, when the mean temperature by Kaemtz's formula was 56·0°. The rainfall was

3·050 inches, distributed over 14 days. The average rainfall for August in the twenty years, 1865–84, inclusive, was 2·877 inches, and the average number of rainy days was 15·5. The rainfall, therefore, was somewhat above, while the rainy days were perceptibly below the average. At Greystones, Co. Wicklow, the rainfall for the month was 2·579 inches, distributed over 13 days.

There was hail on the 4th and 12th; and electrical disturbances occurred near Dublin on the 4th and 7th. The atmosphere was foggy on the 24th, 25th, and 26th, and frequently hazy during the latter part of the month.

Early in the first week the weather fell into an unsettled, showery, and thundery condition, and there were some very heavy local rainfalls. On the 1st and 2nd a low pressure area over the Baltic was slowly approaching the eastern coasts of Great Britain. On Monday, the 3rd, some shallow subsidiaries formed in the western portion of the Baltic cyclonic system—the northerly winds freshened and temperature gave way. In the course of the day a small subsidiary travelled towards S.S.W. across the Irish Sea from Scotland, reaching Cardigan Bay on the morning of the 4th, which was cold, bleak, and rainy near Dublin. In this city hail and rain fell in quantities (·660 inch) between 10 15 and 11 20 a.m., accompanied by distant thunder, and at the last-named hour the temperature was only 45·4°. After 6 p.m. rain again fell in torrents—the total measurement at 9 a.m. of the 5th being 1·719 inches. The local character of this deluge may be appreciated from the fact that at Greystones, Co. Wicklow, the fall was scarcely more than one-tenth the amount mentioned—namely, ·174 of an inch. Thursday, the 6th, was brilliant in Dublin, but very thundery in England—in the evening much sheet lightning was seen towards S.E. Next day a storm of rain, hail, and thunder passed southwards along the coasts of the counties Dublin and Wicklow, the city being almost spared. On this day severe thunderstorms again prevailed in England.

A spell of stormy, cold, and rainy weather followed, lasting until the 13th, when a change to anticyclonic conditions took place, accompanied by very fine days, while the nights were remarkably cold for the time of year. Before this occurred, on Wednesday, the 12th, a well-defined cyclone travelled rapidly across the British Isles from Donegal to Yorkshire. It brought thunder and lightning and drenching showers of rain and hail. In Dublin hail fell as in May, but there were no other electrical phenomena. In the rear of this disturbance the barometer rose quickly until the 14th, when an anticyclone covered the E. of Ireland, England, and Wales, and the N. of France. During the previous night temperature fell to 41° in London and Dublin, 35° at Parsonstown, and 32° at Wick.

In the week ending Saturday, the 22nd, anticyclonic conditions held

almost throughout in Ireland, where the weather was continuously fine, bright, and moderately warm. In England it was less settled after the 19th, owing to the approach from the eastward of an anomalous depression, which showed itself off the W. coast of Norway on the 16th, thence advanced eastwards to Stockholm, but finally changed its course, making towards England, where the weather became dull, with cold N. or N.E. winds and thunder-showers. No rain fell in Dublin from the 12th to the 22nd. On the evening of this latter day there were heavy but partial showers.

Cool, changeable, cloudy weather prevailed for the most part from this time to the end of the month. Conditions were throughout cyclonic over the Baltic, and this brought down a cold northerly air-current upon Great Britain, with much cloud and haze. Wet fogs enveloped sea and land near Dublin on Tuesday, the 25th. The wind now drew towards E., as a series of depressions appeared over France, causing bad weather and thunderstorms in that country. On the 29th the air became unusually dry in Dublin, where the day was cool and very fine, in marked contrast to Sunday, the 30th, which was gloomy in the forenoon and very wet in the afternoon. The last day of the month was very dull and cold until evening, when it became clear, calm, and frosty. In Scotland the month closed with a sharp frost—the thermometer in the screen falling to 34° at Leith, 33° at Aberdeen, 31° at Nairn, and 29° at Wick, in the course of the night.

PERISCOPE.

HOPEIN.

THIS alkaloid, which appears to be different from the lupulin of Griessmayer, is described by W. T. Smith of London, (*Deutsch. med.-Zeitg.*), who refers to previous investigations by Williamson and Springmühl, who gave it the name of hopein. It is said to be most abundant in the American wild hop. It occurs as a white crystalline powder, or in the form of needles a third of an inch long. It is very sparingly soluble in water, but dissolves freely in alcohol, the solution having the most intense bitter taste and a pronounced smell of hops. Chemically, it bears a close resemblance to morphin. In its physiological action it is a pure narcotic, even fatal doses producing no irritant effect; but it contracts the pupil, raises the temperature, and increases the frequency of the pulse at first, but afterward diminishes it. The deep sleep which it induces is apt to be preceded and followed by peculiar hazy hallucinations. The author has used it as a hypnotic, in doses ranging from one-third to six-tenths of a grain for adults, and in his own person he

found that three-quarters of a grain produced symptoms of poisoning. He finds that the dose does not have to be increased on account of the system becoming habituated to the drug. He thinks that the "toxic dose" is not much above a grain and a half for adults, and not over nine-tenths of a grain for children.—*N. Y. Med. Jour.*, August 15, 1885.

COMPOUND CHRYSAROBIN PIGMENT.

Dr. George Henry Fox, in the second edition of his "Photographic Illustrations of Skin Diseases," speaks of a combination of chrysarobin, salicylic acid, ether, and collodion as a satisfactory application in the external treatment of psoriasis. The formula which he advises is as follows:—Chrysarobin, 10 parts; salicylic acid, 10 parts; ether, 15 parts; flexible collodion, to 100 parts. This combination is known at the New York Skin and Cancer Hospital as the "Compound Chrysarobin Pigment." Dr. Fox speaks very highly of this means of treatment. Chrysophanic acid causes more staining of the integument, and sometimes excites a pretty severe dermatitis, besides injuring clothing. This combination of chrysarobin does not produce these unpleasant effects.—*Journal of Cutaneous and Venereal Diseases*, August, 1885. [In a severe case of symmetrical psoriasis, of old standing, in a girl aged eight years, who came under treatment in the Medical Ward for Children in the Meath Hospital, the editor has recently employed this pigment. After three weeks daily application, the psoriasis patches completely disappeared. The non-infected skin was stained a deep violet brown, but gradually desquamated, and was replaced by normal skin.]

REMEDIES FOR SKIN-DISEASES IN THE FORM OF SPRAY.

Dr. Hardaway highly recommends spray as a vehicle in the treatment of affections of the skin. His usual habit is to prescribe a solution of definite strength, from which the bottle of an ordinary hand-ball apparatus is filled, and the patient is then directed to throw the fine spray on the parts affected. Any substance that is "sprayable," either in its liquid form (diluted or pure) or in a state of solution, may thus be employed—*e.g.*, carbolic acid, sulphate of zinc, lotions of grindelia robusta, thymol, liq. picis alkalinus, and fluid cosmoline (medicated or not). In the case of the fluid cosmoline, the tube of the atomiser should be large. The spray finds its greatest range of usefulness in diseases affecting large areas, and in that class of disorders accompanied by itching and a more or less unbroken cuticle—viz, pruritus, urticaria, papular eczema, and the like. In generalised pruritus he had had good results from spraying on a lotion of the following sort:—Carbolic acid, three to four drachms; glycerin, one ounce; and water, a pint. After the bottle of the atomiser had been filled, he sometimes directs the patient to add from five to ten drops of the oil of peppermint. The atomiser-bottle should be thoroughly shaken

before the bulb is compressed, in order to diffuse the peppermint through the mixture, as otherwise it would merely float on the top. In many instances the spray is far superior to mopping on lotions with a sponge or rag, being neater and less troublesome, getting the remedy more evenly and uniformly applied over the surface, and usually giving more speedy relief.—*Journal of Cutaneous and Venereal Diseases*, Vol. III., No. 4; and *Philadelphia Med. Times.*

ERYSIPELAS OF THE LARYNX AND PHARYNX.

In the *New York Med. Journal*, Sept. 12, 1885, will be found a paper on this subject, which was read by Dr. D. Bryson Delavan, before the American Laryngological Association on June 24, 1885. Dr. Delavan records two cases in illustration of his remarks, and in one of these the malady was complicated with a widespread "broncho-pneumonia." Dr. Delavan observes that in an article published in the *Rivista Clinica e Terapeutica*, No. 1, 1885, Dr. F. Massei, of Naples, endeavours to prove, from a study of thirteen cases, that the so-called primary œdema of the larynx, or phlegmonous laryngitis, corresponds clinically to a localisation of erysipelas in the larynx. He describes the objective symptom of the disease as being a marked swelling, which, beginning at the epiglottis, extends to the mucous membrane of the arytæno-epiglottic ligament and the inter-arytænoid space, causing dyspnœa, dysphagia, and aphonia. The onset is generally sudden, and the laryngoscope shows such intense swelling that the interior of the larynx cannot be demonstrated. Blood and pus are occasionally poured forth from spontaneous rupture of the mucous membrane. Often the swelling migrates, decreasing on one side and increasing on the other. The prognosis is, either recovery or else death by asphyxia or pneumonia. Massei considers the disease erysipelatous for the following reasons:—1. Its rapid development and its tendency to wander, as well as its predilection for parts in which the lymphatics are abundant. 2. The constitutional symptoms which resemble those of erysipelas. 3. Its want of resemblance, from its migratory character, to the ordinary forms of laryngitis. 4. The tendency of the disease to extend to the lungs, and, finally, its occurrence during the course of epidemics of erysipelas. He concludes:—1. There is a primary erysipelas of the larynx. 2. Many cases reported as primary œdema of the larynx are really cases of erysipelas; this occurs more commonly than is generally supposed. 3. There are two forms—in the first, the local manifestations precede the general; in the second, they close the scene. 4. The best methods of treatment are applications of cold, scarification, and, finally, if asphyxia threatens, tracheotomy.

In Memoriam.

BENJAMIN GEORGE MacDOWEL,

M.D., Univ. Dubl.; F.R.C.S.I.;
Physician in Ordinary to Her Majesty the Queen in Ireland.

We deeply regret to announce the death, after a short illness, of one of the most popular, as he was one of the ablest, of our Irish physicians—Dr. Benjamin George MacDowel, one of the Physicians in Ordinary to her Majesty the Queen in Ireland, and Physician to the House of Industry Hospitals, Dublin. The sad event occurred on the afternoon of Tuesday, September 15th, at Dr. MacDowel's suburban residence, 5 Haddington-terrace, Kingstown. So recently as that day week, Dr. MacDowel was actively engaged in his professional pursuits, although feeling far from well. In the afternoon a shivering fit warned him of the onset of serious illness. Next day there was a recurrence of this ominous symptom, followed by feverishness. Soon a dangerous bronchial catarrh supervened, which ultimately proved fatal, after a brave struggle for life on the part of him for whom we mourn, but in whose case we are thankful to learn that death had lost his terrors.

Born some five and sixty years ago, Benjamin MacDowel may be said to have been cradled in the profession of medicine. His father was Dr. Ephraim MacDowel, a physician of deservedly high reputation, some of whose valuable contributions to the literature of his profession may be found in the old *Dublin Hospital Reports*, edited by Dr. John Cheyne early in the present century. While still very young, MacDowel had the misfortune to lose his father. Nevertheless he worked on, until, in 1841, he became a licentiate of the Royal College of Surgeons in Ireland. Some time afterwards a connection of his family, the late Chief Justice Doherty, was the means of obtaining for him the important and much-prized appointment of Physician to the House of Industry Hospitals—an appointment which he held up to the time of his death. A curious anecdote is told of the Chief Justice *à propos* of this. It seems that a wealthy gentleman named Mr. Carroll intended to make Dr. Ephraim MacDowel (his own first cousin) his heir, but was prostrated by paralysis while in the very act of signing a will to this effect. The property, worth several thousands a year, in consequence reverted to Chief Justice Doherty, who

had married Mr. Carroll's sister. After the death of Dr. MacDowel the Chief Justice generously used his influence with the Lord Lieutenant of the day to obtain an appointment for Dr. MacDowel's son, the subject of the present memoir. The Lord Lieutenant, without inquiring into the young man's profession, conferred upon him a valuable ecclesiastical appointment, but on discovering his mistake made him Physician to the House of Industry Hospitals, a vacancy on the staff happening to occur at the time.

Of his colleagues on the Hospital Staff, Dr. Banks and Dr. Gordon, on the Medical side of the house, and Professor Robert W. Smith among the Surgeons, were numbered amongst his most intimate friends. The friendship between Gordon and MacDowel dated from the time they were students together. In those days MacDowel contracted typhus fever, which quickly assumed a very severe type. Relative to this illness, Dr. F. C. Crossle, in later years one of Dr. MacDowel's pupils, tells the following interesting anecdote:—"Day and night the course of the malady was anxiously watched by his friend. As the period approached at which a crisis might be expected, the wildest delirium and symptoms of the most alarming nature occurred. Reason was completely unseated, and even the face of the anxious attendant was unrecognised. At last, in the dead of night, a ray of light seemed to brighten the darkness. The weary and restless patient, whose eye had not closed and whose form had not rested for hours, addressed his friend Gordon by name, and asked him what he was doing there at that hour of the night—bade him put out the light and come to bed. Delighted at even a momentary return of reason, and anxious in every way to tranquillise the excitement of the delirium, Gordon extinguished the light, and leant over the bed of the sufferer. This, however, did not satisfy the wary patient. Into bed, alongside him, his friend must get—and, consequently, Gordon lay down beside him. Next morning the crisis was past, the fever had gone, and what turned out to be a favourable convalescence was established. Thus was spared to the anxious attendant an ever-warm and grateful friend, to Irish Medicine one of its brightest ornaments, and to society one of its most esteemed and highly-gifted members." To this Dr. Gordon adds that, two days after this sudden crisis occurred, he received a letter of deep gratitude from MacDowel's mother, with a valuable diamond pin, both of which he carefully cherishes to this day.

MacDowel now threw himself with characteristic ardour into the practice of his profession, and soon made a name for himself as a well-

read, intelligent, and able Physician. In 1845 he became a Fellow of the Royal College of Surgeons in Ireland, and in the following year he joined the Royal College of Physicians in London. It was not until the year 1880, however, that he joined the King and Queen's College of Physicians in Ireland. To the membership of this body he proceeded in the following year. In 1858, upon his appointment as Professor of Anatomy and Surgery in the School of Physic in Ireland, in succession to Dr. Robert Harrison, MacDowel took the degree of M.D. in the University of Dublin, and in 1859 he became a Master in Surgery of the same University. For many years previous to obtaining the Professorship he had been making frequent and valuable communications to the Pathological Society of Dublin, of which he became the President in the year 1865. He also enjoyed a large and increasing practice asa Physician. It was, therefore, all the more to be regretted that by virtue of his office, as Professor of Anatomy and Surgery, he was obliged to act as Surgeon to Sir Patrick Dun's Hospital—the Clinical Hospital of the University of Dublin. This multiplicity of duties would have proved too much for a less able man, but MacDowel discharged them sufficiently well to retain the confidence of the Board of Trinity College at three septennial elections to his professorial chair. In 1879, however, he finally retired from the Professorship, being succeeded by Dr. Alexander Macalister. But he did not sever his connection with his Alma Mater, for he was afterwards elected a Member of the Academic Council of the University of Dublin. When the Royal University of Ireland was created, Dr. MacDowel was appointed an Examiner in Medicine, and subsequently was elected to be a Medical Fellow of that University. In 1881, shortly after the death of Dr. Alfred Hudson, he was appointed a Physician-in-Ordinary to her Majesty the Queen in Ireland, joining in this honour his friend and colleague, Dr. Banks.

Dr. MacDowel contributed several articles to Dr. Todd's "Cyclopædia of Anatomy and Physiology," as well as numerous Pathological Essays and Papers to the *Dublin Journal of Medical Science* and the late *Dublin Hospital Gazette.*

Possibly the highest tribute which could be paid to the intrinsic merit of his writings is to be found in the following letter from Dr. Graves, the illustrious Physician to the Meath Hospital:—

"Merrion-square, 13th Nov., '52.

"My Dear Sir,—I have been engaged for the last few evenings with your paper on Diseases of the Heart, and, as an old friend of your father's, I cannot

refrain from expressing the great pleasure it has given me to find his son so distinguishing himself.

"Your observations have cleared up several difficulties which embarrassed me frequently when engaged practically in treating persons so afflicted, and consequently I think it a duty to convey to you the high estimate I have formed of the value of your researches.

"I remain, my dear Sir,

"Truly yours,

"ROBT. J. GRAVES."

But it was as a Clinical Teacher, and above all as a School Lecturer, that he especially shone. He had the art of investing even a dry and difficult subject with the glamour derived from a living enthusiasm, translated into eloquent yet simple language. His lectures in Trinity College were always attractive, and drew large audiences of silent and attentive students.

To his pre-eminent ability as a Physician also a tribute must be paid. Ever kind, gentle, and sympathising, he won the hearts of countless patients, whom his keen diagnostic powers, his calm judgment, and his ripe experience enabled him often to rescue from death, and always to relieve.

Those who knew him intimately will learn without surprise that he quailed not when he himself entered the dark "Valley of the Shadow of Death." To the very last his thoughts were of those and with those whom he loved so well—his wife and children. Only a few hours before the end he heard that a much-loved daughter was on her way to Ireland to see him before he died. Fortunately she arrived in time, and, weak and failing as he was, he raised himself in bed to greet her, so that she should not be grieved beyond measure by seeing him so very weak. And thus he passed away—loving and loved, kind, generous, and brave.

A wife and five children are left to mourn his loss. His elder and only surviving son is Dr. Effingham Carroll MacDowel, a Graduate in Arts and Medicine of the University of Dublin, and a Fellow of the King and Queen's College of Physicians. He is Surgeon to the County Infirmary of Sligo. His younger son, a Lieutenant in the Royal Engineers, fell in the Zulu war, in January, 1879, while nobly rallying the last remnants of the British force on the fatal field of Isandhlawna. This was the great sorrow of the closing years of MacDowel's life, but he bore it bravely, and with Christian resignation. Of him, truly, we may say, with Horace—

"Multis ille bonis flebilis occidit."

J. W. M.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CLXVII.—NOVEMBER 2, 1885.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. XVI.—Notes on Famine Diseases. By ALEXANDER PORTER, M.D., F.R.C.S.I., M.R.I.A., Surgeon-Major I.M.S.; Fellow of Madras University; Professor of Medical Jurisprudence, Madras Medical College, - - - - - - - - 361

ART. XVII.—Pulmonary Phthisis and Bacilli. By HENRY S. GABBETT, M.D., Dub.; M.R.C.P., Lond., - - - - - 376

ART. XVIII.—Address at the Opening of the Session 1885–6. Delivered in the Theatre of the Meath Hospital, November 2, 1885. By ARTHUR WYNNE FOOT, M.D., Univ. Dubl.; Senior Physician to the Meath Hospital; Fellow of the King and Queen's College of Physicians in Ireland; Professor of the Practice of Medicine, Royal College of Surgeons in Ireland, &c., - - - - - 386

ART. XIX.—Arthritis, arising from Peripheral Nerve Lesions. By J. M'ARDLE, F.R.C.S.I.; Surgeon to St. Vincent's Hospital, - 398

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. Helps to Health. By HENRY C. BURDETT, - - - 408

2. Contributions to Pathology and the Practice of Medicine. By JOHN RICHARD WARDELL, M.D., Edin., - - - - 410

3. A Hand-book of the Theory and Practice of Medicine. By FREDK. T. ROBERTS, M.D., B.Sc., F.R.C.P. Sixth Edition. - - 410

4. Index Catalogue of the Library of the Surgeon-General's Office, United States Army. Vol. VI. HEASTIE-INSFELDT, - - 411

5. A Theoretical and Practical Treatise on the Hæmorrhoidal Disease, giving its History, Nature, Causes, Pathology, Diagnosis, and Treatment. By WILLIAM BODENHAMER, A.M., M.D., - - 412

PAGE

6. On Diseases of Rectum and Anus. By HARRISON CRIPPS, F.R.C.S., Assistant-Surgeon, St. Bartholomew's Hospital, &c., - - 412
7. Croonian Lectures on the Hygienic and Climatic Treatment of Chronic Pulmonary Phthisis. By HERMANN WEBER, M.D., - 414

PART III.—HALF-YEARLY REPORTS.

REPORT ON FORENSIC MEDICINE. By H. C. TWEEDY, M.D., Dubl.; M.K.Q.C.P.; Diplomate in State Medicine, Trin. Coll. Dubl.; Fellow and Examiner, Royal College of Surgeons; Physician to Steevens' Hospital:—

1. Cremation, - - - - - - - 415
2. Cadaveric Lesions of the Nervous Centres, - - - 417
3. Adipocere, - - - - - - - 417
4. The Blood of the Insane, - - - - - 418
5. Insanity Alternating with Spasmodic Asthma, - - - 419
6. Recent Changes in the Lunacy Laws, - - - - 420
7. Lord Selborne's "Lunacy Acts Amendment Bill," - - 422

PART IV.—MEDICAL MISCELLANY.

CLINICAL RECORDS:—

Acute Dissecting Aneurysm of the Aorta. By JAMES CARNEGIE MACMULLEN, L.K.Q.C.P., L.R.C.S.I., Coromandel, New Zealand, 424

SANITARY AND METEOROLOGICAL NOTES. Compiled by J. W. MOORE, M.D., F.K.Q.C.P., F. R. Met. Soc.:—

Vital Statistics of the Eight Largest Towns in Ireland, for Eight Weeks ending Saturday, October 10, 1885, - - - 426
Meteorology—Abstract of Observations made at Dublin for Month of September, 1885, - - - - - - 431

PERISCOPE:—

Extirpation of the Larynx for Malignant Disease, - - 407
Pilocarpin in Alcoholism, - - - - - - 423
Fœtid Perspiration, - - - - - - 425
Subcutaneous Injection of Quinine, - - - - 425
The Infectiveness of Pneumonia, - - - - - 434
Extemporaneous Examination of the Milk of Wet Nurses, 435
Hysterectomy by the Vagina, - - - - - - 435
Alcoholic Dyspepsia, - - - - - - 436
Treatment of Tuberculosis, - - - - - 436
Prolongation of Cocain Anæsthesia, - - - - 436
The Pathogeny of Paralytic Affections in the Old, - - 436
Nephrectomy, its Indications and Contraindications, - - 437
Salicylic Acid and Castor-Oil in Psoriasis, - - - 437
A Case of Paralysis of the Lower Extremities with Hypertrophy of the Skin, Subcutaneous and Muscular Tissues, - - 438

IN MEMORIAM—FREDERICK W. WARREN, M.B., M.A., Univ. Dubl., F.R.C.S.I., - - - - - - - - 439

THE DUBLIN JOURNAL

OF

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NOVEMBER 2, 1885.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XVI.—*Notes on Famine Diseases.* By ALEXANDER PORTER, M.D., F.R.C.S.I., M.R.I.A.; Surgeon-Major I.M.S.; Fellow of Madras University; Professor of Medical Jurisprudence, Madras Medical College.

DURING the Madras famine of 1877–78 the writer had, in addition to his official duties, the charge of the sick of a Famine Relief Camp. It is proposed to give some account in the following pages of the diseases from which these patients suffered and died, basing the narrative mainly on the lines indicated by the pathological appearances observed in 459 consecutive autopsies made as leisure permitted. The details of a few of these cases are also briefly given as a record of the facts observed in each case.

The most common diseases that came under treatment was that shown in the return as diarrhœa:—

		Total.	Alvine Flux.	Per cent.
	Admissions, -	17,680	10,770	60·09
Alvine Fluxes.	Deaths, -	6,203	4,556	73·6
	Autopsies, -	459	347	75·6

From the above figures it will be seen that this furnished nearly two-thirds of the total admissions, and about three-fourths of the total deaths and autopsies.

These cases may be divided into those without ulceration, those with ulceration, those with diphtheritic effusion, and those with the two latter characteristics combined, as shown below.

	Men.	Women.	Children.	Total.
No ulceration, - -	26	19	19	64
Ulceration, - - -	59	52	21	132
Do., and diphtheritic effusion,	23	12	10	45
Diphtheritic effusion alone, -	58	36	12	106

General state.

Taken as a whole these patients were greatly emaciated, the majority had œdema of the feet, and about two per cent. suffered from general anasarca. Usually the skin was dry and covered with scurf, but there was seldom any skin disease present, except, perhaps, itch, which is so common among natives. The temperature of the body in all cases observed was about one degree below normal, the temperature in the rectum being one degree higher than that in the axilla; the latter is the one entered in the record unless otherwise stated. There were bed-sores present in a few cases, and ulceration of the cornea in, perhaps, half a dozen in all; but ulcers on the legs, from breaking out of old sores, were not very uncommon. In no case were there marked symptoms of scurvy present.

The belly often felt hot, and was generally very much retracted, with the walls tensely drawn over the viscera, and tenderness on pressure over the colon was not uncommon. It was probably to relieve the tension and pain that these patients adopted the peculiar position in bed they usually assumed—namely, lying on the side with the legs drawn up and shoulders bent forward.

The majority stated that the disease had begun as dysentery, but in comparatively few were the stools found dysenteric on admission; these varied greatly in appearance and odour, and this seemingly without any reference to the state of the gut, as found in the autopsy—in fact, some of the most fœtid stools were in cases where the gut was found free from apparent disease, and extensive ulceration has often been found without diarrhœa having been a prominent symptom during life, or even without its having been noticed at all by the hospital staff, who, besides being overworked, had to contend against the persistent endeavours of the patients to conceal any bowel complaint, lest they should be put upon milk diet and deprived of curry and rice, the only thing they considered worthy of the name of food.

ALVINE FLUX WITHOUT LESION OF GUT.

Under this head came 64 out of 347 deaths from bowel complaints, or nearly one-fifth of the whole.

			Total.		Per cent.
Men,	26	-	166	=	15·6
Women,	19	-	119	=	16
Children,	19	-	62	=	30·6
Totals,	64	-	347	=	18·4

The above figures show the men and women to contribute, in about equal proportions, 16 per cent., while the children are proportionately nearly double this, 30·6 per cent. Of the 19 children 14 were boys. When duly considered it is sufficiently startling that in deaths from bowel complaints among children no lesion in the gut should be found in nearly one-third of the cases; and this not resulting from speedy death after attack, for one child had been under treatment in hospital twenty-four days, and was said to have been ill a week before admission. However, eight, or nearly one-half these children, died on the day of admission, but were said to have been ill with the disease on an average over nine days when admitted. The average stay in hospital for the whole 19 children was nearly four days, the average duration of illness before admission being nearly six days.

Again, six, or nearly one-third of the women, and four, or nearly one-sixth of the men, died on the day of admission, after an antecedent illness of, it was said, fully nine days on an average, the extremes being two days and thirty. The average time in hospital of the 45 adults was nine days, and average duration of illness before admission five and a half days. One man had been under treatment in hospital for sixty-six days, and was ill three days before admission.

Disease complained of. The disease complained of on admission was dysentery and diarrhœa in as nearly as possible equal numbers among all three—men, women, and children.

The nature of the stools varied a great deal, and presented much the same appearance, whether the patient had been admitted complaining of dysentery or diarrhœa. The following is an analysis of the cases noted:[a]—

[a] The disease entered is that complained of.

		Diarrhœa.	Dysentery.
Stools.	Thin feculence, - -	8	2
	Do., mud-coloured, -	2	3
	Yellow water, - -	1	3
	White flocculi in water, -	2	2
	Whitish fluid, - -	1	0
	Slimy mucus, - -	1	2
	Venous blood, - -	0	1
	Beef-brine-like, - -	0	2
	Scybala, - - -	0	1
	Half-formed bloody mucus, separate, - - -	0	1

Contents, large intestine. The contents of the large intestine were found to be similarly characterised as follows:—

	Diarrhœa.	Dysentery.
Thin feculence, - - -	2	2
White flocculi in water, - -	1	2
Green fluid, - - - -	0	2
Blood in clots, - - - -	0	1
Ochrey yellow pult, - - -	2	0
Green mucus, - - - -	1	0

In the remainder, forming about four-fifths of the whole, the colon was empty, except gas in extraordinary quantity in two children.

Contents, small intestine. The small intestine also was found empty in nearly half the cases, distension with gas being noted in four cases, three of them children. The contents, when present, were:—

	Diarrhœa.	Dysentery.
Ochrey yellow pult, - - -	3	5
Do. water, - - -	5	1
Mucus, - - - - -	2	1
Bloody fluid, - - - -	1	2
Dark-brown do., - - -	1	0
Lumbrici, - - - -	14	10
Gray fluid, - - - -	1	4
Green do., - - - -	2	4
White flocculi in water, - -	1	1
Buff or mud-coloured fluid, -	2	1
Tapeworm, - - - -	1	0

The number of lumbrici present varied from 1 to 13, the average being 3½. In one child, Case XXXII., a lumbricus was lodged in the duct of the pancreas.

Case XXXII.—Partheu, the son of a Pariah coolie, about six years old, from Mudoovanum, one month in Madras, and six days ill with "dysentery," admitted on 10th August. He is a skeleton, with a scrofulous-looking ulcer on chest; no œdema; pulse 112, weak; respirations 16, laboured; belly puffed, painful on pressure, hot; stools yellow; mucus passed frequently. Died on 13th. Autopsy nine hours after death. Height, 3 feet; weight, 16 lbs.; body as above; rigor mortis going off.

Skull.—Scalp and meninges pale; arachnoid normal; pia mater injected; veins full, with red discoloration around.

Brain, 35½ ozs., firm, hyperæmic.

Chest.—Right pleura healthy. *Lung*, 3⅜ ozs., not collapsed, livid, spotted darker from lobar pneumonia; hardly any œdema. *Left pleura* and *lung* 3¼ ozs.; like right, but pink instead of livid.

Pericardium pearly, moistened with serum. *Heart* 1¼ ozs.; full of dark firm clots; no fat on surface.

Abdomen.—Peritoneum healthy.

Small intestine distended with gas; contains some yellow pulp and three lumbrici; one is lodged in the duct of the pancreas; coats thin and pale; dirty rose-coloured *en masse*.

Large intestine empty; mucous coat swollen, rosy, with the mouths of the follicles red.

Stomach small; empty; mucous coat pale, rose, rugose.

Liver 9¼ ozs.; plump; anæmic; 4 + 2 × 3½ × 2 inches; section pale; liver mottled yellow; very fatty; gall bladder full of thin dark green bile.

Spleen ½ oz.; livid; 2½ × 1¼ × ¾ inch; not friable, and no pulp exudes on pressure.

Kidneys ¾ oz. each; capsule strips easily; cortex pale yellow; medulla livid; very fatty.

Pancreas ½ oz.; healthy; a lumbricus lodged in duct; no fat in mesentery; glands normal.

Small intestine, appearances of.

The walls of the small intestine showed a general thinning of the tissues. In one case there was a diverticulum present, and in two a small fatty tumour was attached to the mucous membrane of the ileum. The appearances noted were as follows:—

	Diarrhœa.	Dysentery.
Looked healthy, - - - - -	2	3
Pale and thin, like parchment, - -	10	9
Do., venous radicles showing through, -	1	1
Do., closed glands pale and prominent, -	1	1
White as milk, - - - - -	2	1
Pale rose to pinkish, - - - -	3	8
Do., valvulæ conniventes white, - -	0	2
Do., do., œdematous, - - -	1	1
Pale rose, villi white, looks sodden, - -	1	0
Pink, with red puncta or ecchymotic-like blotches and lines, - - - -	1	5
Congested more or less deeply, - -	6	6

Congestion in diarrhœa. In these six diarrhœa cases the congestion was of the deep structures and valvulæ conniventes, the surface of the mucous membrane being white in one case; the congestion was confined to the valvulæ conniventes, Peyer's glands showing as white specks in one case, and in one it was confined to the mouths of the follicles, which showed as minute livid points. In a weakly man, who died in a day from watery purging (not cholera), the congestion was almost livid and the solitary glands prominent, as in cholera, and in one the congestion was in lengths of the mucous membrane. In one of the dysentery cases the gut was deeply congested and thickened for two feet at both ends; in another there were circular, red, swollen spots in the ileum; in one the congestion was confined to lengths of the mucous membrane, as in the diarrhœa case mentioned above; in one there was ecchymotic-like, bright-red injection in the jejunum, and deep, livid injections in the ileum, the solitary glands showing as white spots, but not enlarged; and in one the injection was deep-purple, all through looking like superficial ecchymosis in valvulæ conniventes; the glands were not prominent; and in one the mucous membrane was uniformly dull-reddish, with deep-red injection in parts.

In dysentery.

Ecchymosis. The remains of former congestion was manifested by spots of ecchymosis in three cases of diarrhœa and four of dysentery, and by more or less deep pigmentation of the mucous coat, in whole or in parts, in seven cases of diarrhœa and eight of dysentery.

Large intestine, appearance of. In the large intestine the appearances noted may be grouped as follows:—

	Diarrhœa.	Dysentery.
Healthy-looking,	2	1
Dull-white, looks sodden and thick,	2	0
Thin and gray,	6	5
Do., venous radicles showing through,	1	1
Pale rose, turgid and swollen mouths of follicles, red and patulous,	1	2
Do., do., white and patulous,	2	1
Thin and pale, mouths of follicles do.,	2	0
Rosy, with deep-red mottling,	1	1
Pale, livid pointed all through, giving gray look,	3	0
Congested or swollen in lower end,	2	10
Congested in upper end,	2	0
Congested all through,	0	7
Red, granular, and thickened,	0	4
Œdematous, pale-tinged rose, or livid,	3	4
Submucous ecchymosis,	3	1
Pigmentation,	11	9
Cyst forms,	2	4
Cicatrices,	0	3

Follicles conspicuous.

Of the above eight cases, in which the mucous follicles were markedly patulous and rendered conspicuous by their mouths being either injected or very pale, six were children, and the two in which the mucous membrane was thin and pale, not turgid and swollen, also were children. Where the lower part of the gut only was implicated, in one case of diarrhœa, there was simple lividity of the mucous coat of the rectum, and in the other merely a livid tinge, with swelling; and in four cases of dysentery there was deep venous mottling with swelling in three, but no swelling in a fourth; deep-red injection and swelling, from transverse colon downwards, in one, simple livid injection in one, redness in one, and rosy hue, with swelling in rugæ, in one; in two there was simple thickening of this part of the mucous membrane without injection.

Lower gut implicated.

Caput coli implicated.

In the two cases of diarrhœa, where the cæcum only was implicated, there was livid injection of both, but swelling in one only.

Whole length implicated. In the seven cases of dysentery, with congestion, the injection of the mucous coat was from pinkish-red to deep-purple, and was deepest in the lower end, where the swelling also was most marked; this amounting to œdema in two cases. In one case the mucous coat of the cæcum and ascending colon was deep, livid purple, and presented two submucous, flat, uncircumscribed abscesses, each about an inch in diameter, containing yellow pus; in the transverse colon it was pale-red and studded with numerous purple spots—the openings of similar abscesses; in descending colon and rectum it was livid; but in sigmoid flexure it was pale, with cyst forms and follicles distended with muco-pus. The mucous membrane was not thickened, but the other coats felt so.

Red, granular, and thickened. In the four cases of dysentery, where the mucous membrane was injected, granular, and thickened, the lesion extended the whole length of the gut in two, was confined to the ends in one, and to the lower end in one.

Œdema. In the cases of œdema of the mucous coat, in one of diarrhœa, this was pale-rose coloured, and the solitary glands were pink and prominent; in one it was pale-reddish, and the œdema was markedly in tranverse folds, and in the third it was red, injected in the cæcum, else pale, with a livid tinge.

In the four dysentery cases the mucous membrane looked mottled in one, and was markedly œdematous in two.

Ecchymosis. In the dysentery case the ecchymosis was in submucous, non-prominent blotches, recent in the cæcum, less so in the ascending colon. In the diarrhœa cases it was seen in the lower end of the gut as circular black spots, punctated in the centre in one case.

Pigmentation. The pigmentation was general, giving the mucous coat a more or less deep slate-coloration in four cases of diarrhœa and three of dysentery, was of old spots of ecchymosis in four cases of diarrhœa and one of dysentery, was of the mouths of mucous follicles in four cases of dysentery and one of diarrhœa, was of the mouths of cyst forms in three of dysentery and two of diarrhœa, and of cicatrices in three cases of dysentery.

Cyst forms. The "cyst forms" are about the size of small peas, and look like abscesses of the mucous follicles; but [in "The Medical History of the American War," edited by Dr. Woodward, they are stated to be dilated growths of

the tubular glands extending into the submucosa through the muscle of Brücke and into the solitary glands, and that they mostly contain mucus mixed with altered parenchyma of the glands.

Diarrhœa and dysentery differentiated.

In that work it is also stated that the difference between diarrhœa and dysentery lies in the implication in the latter of the part of the gut supplied by the nerves of defæcation, whence arise the symptoms peculiar to the disease. And on examining the present cases this differentiation is borne out, dysentery having been complained of in all cases where marked lesion of the lower part of the gut was found in the autopsy. The two cases of diarrhœa forming apparent exceptions were—one of a child who died on admission, and was said to have been ill four days with diarrhœa. In the autopsy there was found only "some lividity in the rectum, rest of mucous membrane of gut pinkish." The other was the case of a woman who died after being three weeks in hospital with diarrhœa The autopsy discovered the mucous coat of large gut, "pale, with very slight, livid tinge and swelling of folds towards anus," showing the lesion to be so slight in these cases as hardly to constitute an exception.

Lung complication.

The most common complication affecting the death-rate was some affection of the lungs. This usually set in when the vital powers of the patient became lowered, and hastened the end. Hence the sub-arrangement of the attached cases is in accordance with the nature of the lung complaint found in the autopsy.

Lungs healthy,	Men,	4	cases.
„	Women,	8	„
„	Children,	6	„
Pneumonia, Acute,	Men,	3	„
„	Women,	1	„
„	Children,	10	„
Pneumonic Congestion	Men,	15	„
„	Women,	4	„
„	Children,	2	„
Other Lung Complications	Men,	4	„
„	Women,	3	„
„	Children,	1	„

Subjoined are the last-named cases, eight in number:—

Case I.—Chengelroy, a potter by caste and calling, about fifty-five years old, from Ochlevakum, two years in Madras, one month on famine

relief, and ill ten days with "dysentery" and four with cough; admitted 6th June. Is emaciated, with œdema of feet and face; belly doughy; painful on pressure; stools five last night; a pint of thin yellowish fluid; pulse 100; respirations 28; cough not troublesome; wheeze with expiration in apex of left lung; no dulness on percussion; skin dry and warm (99° F. to 102° F.). Died on 10th June. Autopsy one hour after death. Height, 5 feet 7½ inches; weight, 90 lbs.; body emaciated; no œdema; rigor mortis present.

Skull.—Scalp and meninges normal; some serum in and beneath arachnoid.

Brain, 47¾ ozs., firm, rather anæmic, some pale serum in lateral ventricles.

Chest.—Right lung 14½ ozs.; slight recent adhesions over a livid spot on base, from which frothy fluid flows freely on section, and is studded with thick-walled cavities the size of large peas, containing inspissated mucus and pus; similar cavities, feeling like pellets, in the thin posterior part near apex; rest of lung healthy. *Left pleura*—recent adhesions and false membrane posteriorly; contains nearly a quart of bloody serum. *Lung*, 22⅞ ozs.; similar cavities all through lower lobe, and at apex posteriorly surrounded by lividity with œdema, one cheesy deposit of same size at root; the others feel hard, and contain sticky thick matter, consisting of granules and masses of epithelial cells.

Pericardium distended, with dark amber serum, pearly. *Heart*, 6¾ ozs.; little fat; some fluid blood on both sides.

Abdomen.—Peritoneum pearly, moistened with reddish serum.

Small intestines contain a quart of ochrey pult; mucous coat pale; valvulæ conniventes milk white; a rosy tinge in ileum; lots of clear mucous, detached by fingers.

Large intestines empty; mucous coat of ascending colon dusky pink and œdematous, with one dark old cicatrix; of rest rosy and swollen, with minute warty prominences like hypertrophied papillæ, increasing in number and size on rugæ towards rectum.

Stomach large; full of milky fluid; pale and smooth.

Liver, 25½ ozs., cirrhotic-looking, 6 + 2 × 5 × 3 inches; section, pale cirrhotic; very fatty. *Gall bladder* full of thick dark bile.

Spleen, 1 oz., 3 × 2 × ¾ inch, red, not friable, no pulp.

Right kidney, 2 ozs.; capsule strips easily; medulla, white-like fibrous tissue; cortex, pale, livid, mottled yellow, fatty.

Left kidney, 1 oz., granular on surface, else like right.

Pancreas, 1 oz., healthy.

Mesenteric glands atrophied, a little fat in mesentery.

Case II.—Vyapoora, a weaver, about fifty years old, from Conjeveram, ten days in Madras, three ill with "dysentery." Admitted on 19th

August. He is a skeleton; no œdema; pulse 100; respirations 20; belly retracted, soft, not painful on pressure; stools yellow fluid; some nausea; skin clean. 12th September.—Two thin motions daily; urine healthy. Dropsy made its appearance to-day, and increased till death, on the 24th October. Autopsy nine hours after death. Height, 5 feet 5 inches; weight, 101 lbs.; body dropsical; rigor mortis present.

Skull.—Scalp and meninges pale, 2 ozs. serum in and beneath arachnoid.

Brain 45½ ozs., firm, anæmic, a clot in sulci of convolutions of anterior cornu of left hemisphere.

Chest.—Right pleura pearly, contains a pint of serum. *Lung*, 11½ ozs.; apneumatosis of nearly whole lower lobe, with slight œdema. *Left pleura* like right. *Lung*, 10¼ ozs.; simple, apneumatosis of whole lower lobe.

Pericardium pearly, moistened with serum. *Heart*, 5¾ ozs.; fluid blood on left side; slight œdema replaces fat on surface.

Abdomen.—Peritoneum pearly; contains two gallons of serum.

Small intestine contains some greenish mucus; looks healthy.

Large intestine empty; mucous coat pinkish red, œdematous in lower end, with pigmentation of the mouths of follicles, many of which are distended with pus; there are also cyst forms here as big as large peas.

Stomach empty; lining, pale rose, rugose.

Liver, 18¾ ozs.; margin of left lobe atrophied; a white cloud on capsule, 6 + 1¾ × 5 × 2 inches; section, normal; gall-bladder full of pale watery fluid, with a green sediment.

Spleen, 2⅝ ozs.; capsule adherent to parietes by firm bands, 3½ × 3 × ¾ in.; section, dark red, not friable, and no pulp exudes on pressure.

Kidneys, 2¼ ozs. each; capsule partly adherent, section red, cortex paler, structure normal.

Pancreas 1¾ oz., healthy.

Slight œdema of mesentery; glands small and pale.

Case III.—Veerasauruy, a Pariah coolie, about fifty-six years old, from Chingleput, two months in Madras, ill five days with "dysentery." Admitted and died on 8th August, 1877. Autopsy one hour after death. Height, 5 feet 5½ inches; weight, 85 lbs.; body thin; no œdema; rigor mortis present.

Skull.—Scalp and meninges bloody; serum in and beneath arachnoid.

Brain 40½ ozs., surface dusky, veins empty, substance firm venous hyperæmic, like pia mater.

Chest.—Right pleura healthy. *Lung* 8½ ozs., fully collapsed, of livid tinge in upper, with apneumatosis of lower lobe. *Left pleura* healthy. *Lung* 6½ ozs., less livid than right, and all spongy.

Pericardium, pearly, contains ½ oz. serum. *Heart*, 6⅝ ozs.; fluid blood on right side, fat on surface.

Abdomen.—Peritoneum healthy; guts distended with gas, reddish.

Small intestine contains a quart of whitish blood-tinged fluid; mucous coat bright red, ecchymotic-like, injected in jejunum, deeply livid in ileum; the solitary glands not enlarged, but appearing as small white dots.

Large intestine empty; no thickening or mucous present; mucous coat uniformly red, injected with a livid tinge and livid mottling in parts.

Stomach enormous, full of conjee, lining pale and smooth.

Liver 30 ozs., congested, 7 + 2 × 5½ × 3 inches; cuts soft from hyperæmia; structure normal; gall-bladder full of thick green bile.

Spleen 3 ozs., flabby, lobulated, 4 × 3 × 1¼ inch, not friable, and no pulp exudes on pressure.

Right kidney, 2½ ozs.; capsule strips easily; four small cysts on surface; section uniformly deep red, injected; structure normal.

Left kidney 2⅝ ozs., like right.

Pancreas 2⅜ ozs., healthy.

No fat in mesentery; glands atrophied.

The appearances here were wonderfully like cholera, from the contents of the guts, arterial congestion of its mucous membrane, and conspicuousness of its solitary glands, to the venous congestion of the contents of the cranium, abdomen, and chest, with the fully collapsed lungs.

Case IV.—Veerasauruy, a Vooloocie coolie man, about sixty years old, from Numallay, one month in Madras, ill two days with watery diarrhœa; no vomiting. Admitted and died on 7th July. Is quite a skeleton; no œdema; pulse 92, weak; respiration, 36; some cough for four days; bronchial breathing in right apex; skin scurfy; belly retracted, doughy, painful on pressure. Autopsy six hours after death. Height, 5 feet 5 inches; weight, 75 lbs.; rigor mortis present.

Skull.—Scalp and meninges bloody; a little serum in and beneath arachnoid; pia mater hyperæmic.

Brain, 40 ozs.; slight dropsy of ventricles; substance firm; hyperæmic.

Chest.—Right pleura healthy. *Lung*, 10 ozs.; a shallow cicatrix on apex, and a small spot of sub-pleural ecchymosis on base; veins engorged, of lower lobe especially. *Left pleura* firm; adhesions all over. *Lung*, 11¾ ozs.; slight congestion, with œdema of posterior border; a hard fibrous deposit occupying nearly the entire apex, and a smaller one in lower lobe; the section looks like chronic pneumonia, the microscopic structure being fibrous tissue, with fat granules intermingled; no sign of tubercles.

Pericardium pearly, moistened with serum. *Heart*, 6½ ozs.; little fat on surface; dark fluid blood on both sides.

Abdomen.—Peritoneum pearly; intestines and mesentery injected red, as in cholera.

Small intestine empty; mucous coat reddish; livid at lower end of ileum, with prominence of solitary glands; no mucus.

Large intestine empty; livid appearance of mucous membrane from deep-seated congestion of venous radicles; no thickening.

Stomach large, contains some dark fluid; lining in rugæ, pale, with some punctæ. *Liver* 27½ ozs., a deep furrow across right lobe, 5½ + 3 × 6 × 3 inches; section, dark liver; vessels full of dark tarry blood; structures normal. *Gall-bladder.*—Quarter full of thin green bile.

Spleen 1⅝ ozs., flabby, 4 × 2 × ¾ inch, flaccid, not friable, and no pulp exudes on pressure.

Kidneys, 2½ ozs. each; capsule strips easily, deeply injected, slightly fatty.

Pancreas 2½ ozs., healthy.

Mesentery red, injected, devoid of fat; glands atrophied.

The appearances in this case were very much those of cholera, although the symptoms were not; and he actually walked to hospital a few hours before death.

Case V.—Ponee, a Pariah coolie woman, about sixty years old, from Palaveram, two months in Madras, ten days ill with "dysentery." She is emaciated with œdema of lower extremities and some ascites; belly painful on pressure; pulse, 88; respirations, 24; skin cool, scurfy. Admitted on 13th August, and died on 26th September, 1877; the dropsy in the meantime having greatly increased, and bed sores formed on sacrum. Autopsy one hour after death. Height, 4 feet 10½ inches; weight, 88 lbs.; body dropsical; rigor mortis present.

Skull.—Scalp and meninges bloody, 3 ozs. serum in and beneath arachnoid; pia mater anæmic.

Brain 33¾ ozs., firm and pale.

Chest.—Right pleura pearly, contains a quart of serum. *Lung*, 6¾ ozs.; complete apneumatosis of all except apex. *Left pleura* pearly, contains half a pint of serum. *Lung* 6⅜ ozs., healthy.

Pericardium pearly, contains 4 ozs. serum. *Heart* 5⅝ ozs., fluid blood on both sides, only a trace of fat on surface.

Abdomen.—Peritoneum pearly, contains a gallon of pale serum; intestines collapsed.

Small intestine contains thirteen lumbrici and a little ochrey fluid; mucous coat pale rose, œdematous, especially on the valvulæ conniventes near upper end.

Large intestine empty; mucous coat pale red, marked by œdematous all through.

Stomach small; empty; lining pale rosy, rugose. *Liver* 19½ ozs., three furrows across right lobe, 5 + 2½ × 5 × 2½ inches; section fatty nutmeg, very fatty; gall-bladder distended, with thin dark-green bile.

Spleen, 1½ oz.; has a papillary adhesion to parietes; section red, not friable, and no pulp exudes on pressure.

Kidneys, 1⅞ oz. each; capsules strip easily; section pale; cortex, semi-transparent, not fatty.

Pancreas 1½ oz., healthy.

No fat in mesentery; glands small, with concretion in some.

Case VI.—Mariamah, a Pariah coolie woman, about sixty years old, from Acherpaukum, eight days in Madras, and four ill with "dysentery." Admitted on 2nd August. She is a skeleton; no œdema; belly retracted, soft, painful on pressure; pulse, 80; respirations, 24; stools scanty, pale, slimy; skin loose and hanging. Died on 10th August. Autopsy one hour after death. Height, 5 feet 1 inch; weight, 59 lbs.; body as above; rigor mortis present.

Skull.—Scalp and meninges pale; serum beneath tentorium and arachnoid; pia mater hyperæmic; veins full. *Brain* 38¾ ozs., firm, hyperæmic; serum in ventricles normal.

Chest.—Right pleura pearly; contains a little serum. *Lung*, 9¾ ozs.; two depressed cicatrices on middle of lower lobe, and two on upper, over chronic pneumonic tissue, with a few small tubercles around, else healthy. *Left pleura* like right. *Lung* 9¼ ozs., pale, spongy, with livid œdematous spots on section of lower lobe.

Pericardium pearly; contains 1 oz. serum. *Heart* flabby, fluid blood on both sides, some fat on surface.

Abdomen.—Peritoneum pearly, moistened with serum.

Small intestine contains four lumbrici; mucous coat pink, with clear detachable mucus in jejunum; paler in ileum, where there is green mucus sticking closely to it.

Large intestine empty; mucous coat dusky red; swollen, least so in upper end.

Stomach small, lining dull pink, mottled darker.

Liver 28½ ozs., long and narrow, 7 + 3 × 4 × 3½ inches; acini bordered yellow; extremely fatty; gall-bladder wholly protruding beyond liver margin; full of thin dark bile.

Spleen 1⅝ ozs., flabby, 3½ × 2½ × 1 inch; section dark red, not friable, and no pulp exudes on pressure.

Right kidney, 2⅛ ozs.; capsule strips; surface granular, with small cysts; section uniformly red, slightly fatty.

Left kidney, 2½ ozs.; quite like right.

Pancreas 1¼ ozs., healthy.

A trace of ochrey yellow fat in mesentery; glands atrophied.

Case VII.—Ragachee, a coolie woman of the Pully caste, about fifty years old, from Chingleput, four months in Madras, ten days ill with

"dysentery and cough." She is emaciated, has paralysis agitans, stools mud-coloured; pulse, 96; respirations, 30; has had a cough for ten months; never spat blood; feels giddy; admitted on 38th August, and died on 20th September, 1877. Autopsy, nine hours after death.—Height, 5 feet; weight, 50 lbs.; body a skeleton; œdema of feet; rigor mortis gone off.

Skull.—Scalp and meninges pale, a little serum in and beneath arachnoid, lateral veins full. *Brain*, 39 ozs., softish, anæmic.

Chest.—Right pleura moistened with serum, and slight old points of adhesion behind. *Lung*, 15½ ozs., not collapsed, bronchi exude pus on pressure, upper lobe studded with tuberculoid deposits like fish roe. *Left pleura* pearly, moistened with serum. *Lung*, 11⅜ ozs., not collapsed, tuberculoid deposits in apex and thin margin of base; some congestion and œdema of posterior border.

Pericardium pearly, moistened with serum. *Heart*, 5 ozs., cavities full of dark clots, œdema replaces fat on surface.

Abdomen.—Peritoneum pearly, moistened with red serum.

Small intestine contains seven lumbrici; mucous coat thin, reddish, deeper red in parts; glands normal, no mucus.

Large intestine empty, mucous coat congested in points on transverse folds, no thickening or ulceration.

Stomach small, empty, mucous coat pale in rugæ.

Liver, 17 ozs.; three furrows across right lobe, 5 + 2 × 5 × 2 inches; section anæmic, acini margined white, decidedly fatty; gall bladder half full of thin green bile.

Spleen, 1⅜ oz., 3 × 2 × 1½ inch; section red, not friable.

Right kidney, 2¼ ozs.; capsule strips easily, section red, decidedly fatty.

Left kidney, 2⅜ ozs., like right.

Pancreas, 1⅜ oz., healthy.

No fat in mesentery; glands much atrophied.

Case VIII.—Bavyah, the son of a weaver, aged about five years, from Nellore, five days in Madras, and ill one with "diarrhœa." Admitted 20th June, 1877. Is quite a skeleton, belly puffed, the coils of intestine seen through the thin abdominal walls; pulse, 100, weak; respirations, 20; said to have had looseness of the bowels yesterday, and no motions since. Died on 22nd June. Autopsy four hours after death. Height, 2 ft. 8 in.; weight, 14 lbs. Body quite a skeleton. No œdema.

Skull.—Scalp pale, and meninges and base of skull bloody, arachnoid normal, pia mater rather minutely red streaked, veins mostly empty. *Brain* 33 ozs., firm, rather hyperæmic.

Chest.—Right pleura, old points of lateral adhesion. *Lung* spongy, 2 ozs., pale, with pink tinge in front, and livid tinge behind; in upper is a largish cavity containing concretions, lining like mucous membrane,

but no mucus present, and walls feel hard from old thickening around, but no deposits; some dark red lobules are seen in the section of lower lobe. *Left pleura* healthy. *Lung* 1⅜ ozs., healthy.

Pericardium pearly, moistened with serum. *Heart* 1¼ ozs., flabby, no fat on surface, a little fluid blood on both sides.

Abdomen.—Peritoneum healthy.

Small intestine contains fine lumbrici and some whitish fluid, coats very thin, arborescent injection in ileum showing through, lining rosy, Peyer's patches darker and cribriform; no mucus detachable.

Large intestine empty, thin and grey; no mucus.

Stomach small, empty; lining pale rosy, in rugæ. Liver, 7⅝ ozs.; liver coloured with purple tinge on right, and yellow tinge on left lobe, 3½+2×4×1½ inch, not fatty. *Gall bladder* full of thin dark bile.

Spleen, ⅝ ozs., 2¾×½×1½ inch; section pale red brown, not friable, and no pulp on pressure.

Right kidney, ¾ ozs.; capsule strips easily, anæmic, healthy.

Left kidney, ½ oz., like right, but some injection of medulla.

Pancreas.—Three drachms, healthy.

Mesenteric glands normal; no fat in mesentery.

Art. XVII.—*Pulmonary Phthisis and Bacilli.*[a] By Henry S. Gabbett, M.D. Dub., M.R.C.P. Lond.

Rather more than three years have elapsed since Dr. Koch announced that he had discovered a micro-organism which was constantly present in cases of tuberculosis in man, monkeys, cattle, and other animals; that he had succeeded in cultivating it outside the body for a number of successive generations; that when the minutest particle of such pure cultivations was introduced into the body of a suitable animal, tuberculosis was set up; and, finally, that in such inoculated animals the micro-organism was found to have grown and multiplied. As the result of these investigations, he confidently stated that the true cause of tuberculosis had been at length discovered.

This announcement naturally caused a profound sensation in the medical world. Inasmuch as pathologists had been for years discussing this very question of the causation of tubercle, and as almost everyone had his own pet theory on the subject, there was much opposition to Dr. Koch's views. Some said that the same micro-organisms might be found in normal saliva and in many

[a] The substance of this paper was read before the Eastbourne Medical Society last May.

decomposing substances; others demonstrated to their own satisfaction that the bacilli were consequences not causes of disease; and one writer gravely asserted that they were neither more nor less than *fat-crystals!* But, now that three years have elapsed, this opposition may be said to have completely died away. The question was one to be decided by experiment. If there was no error in Dr. Koch's experiments, there was really no escape from his conclusions. And investigators in many parts of the world have been engaged in testing the accuracy of his work, with the general result that his statements have been confirmed, and the tubercle bacillus acknowledged to be a true pathogenic organism. For its claim to be so regarded rests upon precisely the same grounds as those upon which we rely in considering the anthrax bacillus to be the cause of malignant anthrax in herbivorous animals and rodents, and of "wool-sorter's disease" in man. In both cases the proofs are cogent: and the most competent and careful observers (such, for instance, as Dr. Burdon Sanderson and Dr. Klein) acknowledge that the demonstration has been completely made.

What influence has this discovery upon our views of the pathology of pulmonary phthisis? It would be hard to say what is the latest orthodox opinion upon this long-disputed subject. Doctors differ, and have differed since the time of Laennec, about the nature of phthisis. If we accept the recently-issued *Nomenclature of Diseases* of the Royal College of Physicians (1885) as an authoritative exposition of orthodox doctrine, it would seem that we must acknowledge the existence of three distinct diseases—viz., "acute pneumonic phthisis," "chronic pneumonic phthisis," and "tubercle of the lung." It is evident, however, that the *Nomenclature* cannot be regarded (and indeed is not meant to be regarded) as a strictly scientific classification of diseases according to their essential nature; that the compilers paid "deference to the needs of the various registration authorities;" and that (to quote from the preface to the first edition) "names have not been excluded merely because they may seem to express only vague and imperfect knowledge." Nevertheless, the above division represents the view of phthisis taken by one school of pathologists, who may be said to follow in the steps of Niemeyer, and who hold that in the clinical term, "pulmonary phthisis," several distinct morbid conditions are included. Others maintain that these divisions have no scientific value; that, notwithstanding the great variation in symptoms and

acuteness of course, we have to deal with one disease assuming different forms; and that, notwithstanding the great variation in the *post mortem* appearances, in all true phthisis the tubercular* process may be recognised.

Has any light been thrown upon this vexed question by Koch's discovery? It is obvious that if the bacilli of tubercle are observed to be confined to those cases of phthisis which are universally admitted to be tubercular, it would be a strong argument in favour of the first view. If, on the other hand, they are found also in the so-called pneumonic cases, the supporters of the second opinion may fairly claim that an additional proof has been given of the unity of the disease. Two methods of investigation are open to us—the examination of the sputa during life, and the examination of the lung after death, in order to ascertain the presence of the bacilli. The second method is difficult, and requires a good deal of technical skill; so that the statement that bacilli have not been found in a phthisical lung has really no value unless we are sure that the observer is well versed in modern histological methods. The examination of the sputa, on the other hand, is comparatively easy, and trustworthy results may be obtained by any one who has patience to make repeated experiments. By this time a great number of observations have been accumulated, bearing upon this subject. Dr. Klein thus states the result (*Micro-organisms and Disease*)—"Wherever they (the bacilli) are present in the sputum we have to deal with real tuberculosis; wherever, after repeated examinations, they are found to be absent there is no tuberculosis." This statement, as I understand it, I believe to be absolutely correct; but, if the phrase "real tuberculosis" is meant to exclude the "pneumonic phthisis" of the College of Physicians' nomenclature, I must take exception to the first clause. Tubercle bacilli are found in abundance in the sputa and lungs of persons who would be considered typical cases of "pneumonic phthisis." They are never present in bronchitis, emphysema, bronchiectasis, the

* The primary conception of tubercle is that of a small nodule, with a certain microscopic structure, and a certain life-history. But it has been shown, on the one hand, that the microscopic structure is not peculiar to tuberculosis, and, on the other, that tuberculosis (identified by its history, infectiveness, &c.) may show itself in some cases without distinct "tubercles;" this is especially common in the lungs. Such was the state of knowledge on the subject before Koch's discovery; and, naturally, there was much disputation and confusion, and a wide-spread desire for the detection of some specific element—some element of unity in the processes known as tubercular. It is believed that we have at length found that element of unity in the bacillus.

various forms of pneumonia, or malignant disease of the lung: they may be found in all the forms of true pulmonary phthisis.* Here of course arises the inevitable question—What is meant by "true pulmonary phthisis?" It seems to be useless to attempt a definition when the very terms of it would be disputed; but it may be said that by the name we mean to indicate a destructive disease of the lung, which, with remarkable variations in its mode of onset and in its course, usually commences with local consolidations at the apex; a process which tends to spread in an "infective" manner to other parts; which tends to attack both lungs; which tends to the formation of cavities; and which is associated with the train of symptoms commonly called "consumption," in greater or less degree. What is specially to be insisted upon is this—that the pathogenic organisms are present in all the forms of the disease, and not merely in those in which miliary tubercles are found studding the lung after death, in such numbers and so unconcealed by other morbid processes as to be readily recognisable by the naked eye.

These investigations, then, appear distinctly to support the conclusion that pulmonary phthisis is a tubercular disease, intimately dependent upon the presence of specific bacilli. It would be unreasonable to expect that those who have been long accustomed to other views of the nature and ætiology of the disease, should at once admit the new doctrine; and, indeed, we are all warned by experience of the danger of a too hasty acceptance of pathological theories. But it may be useful to inquire what is involved in the "bacillar hypothesis," and to see whether it necessarily leads to any conclusions at variance with known facts. Supposing then that we take it as proven that tubercle bacilli are essential factors in the causation of phthisis, the following questions suggest themselves:—Whence do the bacilli come? How do they gain an entrance into the body? And, when they have gained an entrance, how do they set up the morbid process?

1. It may of course be considered absolutely certain that in no case do they originate *de novo* within the body—they are certainly introduced from without. A little consideration will show that it is possible to conceive of different kinds of micro-parasites mani-

* In 1883 I communicated to the British Medical Association the result of repeated examinations of the sputa in over a hundred cases of chest-diseases. The conclusion was that given above, and all my observations since have confirmed it. It will be remembered that Koch himself found the bacillus in "caseous pneumonia" and "caseous bronchitis."

festing different habits and vital capabilities—some may be able to live and multiply in the outer world, in air, soil or water, while others may be unable to exist except under conditions which are only to be found in a living body, and must perish when thrown out of the body, unless they can meet with another host. In the latter case the disease with which they are associated is directly communicable from man to man,[a] and, indeed, can only be propagated in that way. In the former case the disease need not, perhaps cannot, be so communicated; infection (in the limited sense of the word) may have nothing to do with its prevalence. Now, it seems to be proved by experiment that tubercle bacilli cannot grow at a temperature much below that of the human body; it follows that there is no probability of their flourishing in the outer world in this climate. From this we might infer that they always come directly from some infected living body, that, in other words, tuberculosis must be directly communicated. But, as a matter of fact, that conclusion is not justified, for the simple reason that tubercle bacilli belong to a class of organisms which are capable of forming *spores;* and the spores of bacilli have marvellous powers of retaining their vitality under the most unfavourable circumstances. Thus it is easily conceivable that spores, thrown out of an infected body in the sputum, may continue to exist for an indefinite period in the outer world, though incapable of germinating till they enter another living body; and it is not improbable that such spores actually surround us in enormous numbers. But whether this is the usual origin of the bacilli which enter a susceptible person, or whether they generally come fresh from a phthisical patient, the fact remains that if we believe in the specific nature of the bacilli[b] we must believe that phthisis, in so far as it is tubercular, is an infectious disease, in the sense that it is due to a "contagium vivum," which comes directly or indirectly from an infected individual. This is one of the necessary consequences of the bacillar hypothesis: whether it is at variance with ascertained facts in the natural history of the disease, is an important and difficult question which admits of much discussion. With regard to hereditary phthisis, of course the explanation must be, not that

[a] Or possibly to man from a lower animal.

[b] I have not thought it necessary to consider the theory of the transformation of septic into pathogenic bacilli, because in the only instances in which that theory has been supported by experiment—the case of anthrax (Buchner) and of jequirity (Sattler)—the experiments have been proved to be faulty. *See* Researches of Koch and Klein.

the bacilli are transmitted to the ovum by either parent, but that what is inherited is a constitutional liability to infection. In what this liability consists we do not know, but we may assume that it is some condition of the tissues which renders them unable to resist the intrusion of the micro-organisms, or which makes them particularly good soil for the growth and multiplication of the same.

2. By what channel do tubercle bacilli enter the body? There can be little doubt that they usually enter by the air-passages. So long as they merely lie free in the healthy bronchi or alveoli, it is probable that they do no more harm than the other bacterial forms which are constantly present on the surface of mucous membranes. But if once they can secure a favourable nidus for their growth, the conditions are changed. What then constitutes a favourable nidus? If we were attempting to make an artificial cultivation of bacilli, we would secure them the proper amount of warmth and moisture, and a nourishing material containing proteids and salts, and then we would leave them undisturbed. All these requirements would seem to be fulfilled in a partially-collapsed pulmonary lobule, filled with stagnant secretion and epithelial debris; and if the bacilli once get planted in such a position, it is probable that they will flourish and multiply after their kind, until an opportunity is given them of intruding still further, and actually passing into the tissue of the lung.[a] When they have entered lung tissue, any one of three consequences may follow—they may encounter unfavourable conditions and perish; they may get into blood-vessels or lymphatics, and in their diffusion throughout the body set up general tuberculosis; or they may settle in the lung and cause local changes.

3. In what way do these micro-organisms set up the morbid process? Some time ago a paper appeared in one of the medical journals, in which it was stated that the bacilli acted simply as *mechanical irritants*, like other foreign bodies in the lungs. The writer seems to have imagined them to be hard, sharp particles of considerable size, like particles of coal-dust or iron-filings. But the bacilli of tubercle are very small things indeed—very small, soft and fragile, so much so that there is something almost ludicrous

[a] Since minute particulate substances when inhaled are constantly taken up by the lymphatic capillaries of the lung, and carried into the bronchial glands, it is hard to deny that various bacteria in the inspired air—and among them the tubercle bacilli—may thus often penetrate into the body even in health. If so, we must suppose that under ordinary circumstances they quickly perish.

in the idea of associating them with mechanical irritation. A large number of them would fit comfortably into a white blood-corpuscle. The fact is that the only instance in which we can conceive of such micro-organisms affecting the tissues mechanically, is when enormous masses plug the capillary vessels. But this is not what tubercle bacilli do. It would appear probable that the injurious effects of their presence are due to some kind of chemical virus, which is elaborated in the process of their growth, and which has a deleterious influence upon the tissue-cells in their neighbourhood. This is purely hypothetical—no one has isolated the virus, no one knows anything about it—but it is difficult to account for the facts by any other hypothesis.[a]

It is sometimes said that the clinical history of pulmonary phthisis is very unlike that of a morbid process caused by the intrusion of micro-organisms. This would certainly be true if all such processes must of necessity follow the type of fermentation, and if all micro-organisms in their action on the body must behave like the saccharomyces in solutions of sugar. In such cases all bacterial disorders should present "zymotic" characters; each disease should run a similar course in every individual attacked; there should be a "period of incubation" from the entrance of the ferment to its multiplication and diffusion through the circulation; then a "period of invasion," during which the ferment is actively performing its peculiar functions; then a time of cessation from action because the material is exhausted; and lastly a period of protection from subsequent attacks. Certainly this is exceedingly unlike the clinical picture of pulmonary phthisis. But in reality the assumption that all micro-parasites must act in this manner is entirely unwarranted. In the typical "zymotic" disease the organisms are supposed to multiply in the blood; it is not difficult to understand that a very different train of symptoms might be produced by their growth in lymphatic structures or in the fixed elements of the tissues. And in fact it is quite certain that there are organisms which give rise to affections purely local, and presenting none of the so-called "zymotic" features. The diverse phenomena manifested in pulmonary phthisis may be readily explained by supposing the bacilli to be variously situated; the occurrence of general tuberculosis by supposing them to enter the circulation.[b]

[a] For a discussion of this question see Klein's "Micro-Organisms and Disease," Chap. XIX.

[b] Tubercle bacilli have been found in the blood in general tuberculosis.

It remains to consider the influence which this view of the causation of phthisis should have upon our prophylaxis and treatment. Soon after the announcement of Koch's discovery enthusiastic writers declared their conviction that in future people would be inoculated for tubercle, and thus the scourge of this country would be abolished. Unfortunately, nothing is more improbable. Even if we could "attenuate" the virus, what reason is there to suppose that it would give immunity? The theory of immunity after inoculation is based upon the observed fact that in certain diseases one attack "protects" the patient for a longer or shorter period, which is explained by supposing that the introduction of the virus produces such an effect upon the body (either by exhaustion of the material necessary for the life of the virus, or by elaboration of material inimical to its development), that in subsequent introductions the virus is inert. But this is by no means the case in every infective disease caused by micro-organisms. An attack of erysipelas does not "protect" the patient, for example. And there is no ground for believing that tuberculosis is different in this respect; on the contrary, clinical experience would seem to show that the invasion of its germs render the tissues less resistant than before. It appears, therefore, that we need indulge no hopes of obtaining immunity by inoculation. Again, we cannot expect to be able to extirpate hereditary tendencies, since we do not know in what these tendencies consist. But we may attempt to strengthen the resisting powers of a person whom we suspect to be susceptible, by improving his physical condition generally, knowing that it is in the highest degree probable that tubercle bacilli have but a poor chance of development in healthy tissues. We may try to ward off those morbid states which, as we have seen, render the lung liable to the inroads of micro-organisms, such as catarrh and pulmonary collapse; we may try to avoid the damage produced by pneumonia and pleurisy; we may forbid sedentary habits, which hinder the expansion of, and circulation in, the lung; we must, if possible, remove the susceptible person from the air of cities, in which it has been proved that all forms of bacteria are more abundant than in the country; we must insist upon thorough ventilation of the rooms in which he lives, and especially of his sleeping room; and, considering that a patient with developed phthisis is to be regarded as a laboratory in which infective bacilli are being constantly cultivated, and from which they are being constantly thrown out,

we must, as far as possible, prevent intercourse between the susceptible individual and such patients. Lastly, as a precaution for the benefit of the community, we should insist upon the destruction of phthisical sputum.

With regard to the influence of the bacillar hypothesis upon our views of treatment, the first question which suggests itself is—If bacilli cause phthisis, how are we to kill the bacilli? Accordingly, Koch's discovery gave a considerable impetus to the recommendations of various "antiseptic" and "germicide" modes of treatment, and there has been a large sale of "oro-nasal respirator-inhalers," by means of which the patient is supposed to introduce into his lungs certain vapours fatal to the bacilli. There is certainly something peculiarly attractive in the idea of the specific treatment of phthisis by antiseptic[a] inhalations. But before we indulge in expectations of important results from such a treatment, it is desirable that we should have some definite notion of what our antiseptics are supposed to do, and in what way they can be useful in a bacterial disease. Now, in the case of phthisis, do we expect the antiseptic substances to kill the bacilli and their spores, not only in the air passages and cavities but also in the tissues? Nothing is more certain than the fact that no known antiseptic can be introduced into the body of sufficient strength to do that without running a serious risk of killing the man also. Allusion has been already made to the resisting powers of the spores of bacilli; as an example it may be mentioned that in the case of the bacillus anthracis (which has been probably more studied than any other), the spores are not killed by soaking them in 10 per cent. carbolic acid, in 1 per cent. corrosive sublimate, or in pure terebene, for twenty-four hours; and that they may retain their vitality after being boiled for ten minutes or frozen for an hour (Klein). But perhaps our more modest hope may be that, without destroying the spores, we may hinder their germination; or possibly we may even limit ourselves to the expectation that the bacilli growing in cavities with free access of air may find it hard to flourish in the presence of antiseptic vapour. It need scarcely be pointed out that if this is all that the antiseptics can do, they have no great value as a "radical" cure. But unfortunately it seems quite certain that they cannot even do this. After weeks and months of conscientious inhalations, patients' sputa have been examined

[a] The term "antiseptic," though obviously a bad one, is retained because it is so commonly used by those who deal with this subject.

and found to contain swarms of bacilli which appeared to have been thriving in the medicated atmosphere. It is evident that there is still less prospect of benefit from the introduction of antiseptics into the stomach.

But although at present it seems quite useless to attempt to attack the micro-parasites directly, it does not follow that at some future time, when we have learned more about their life-history, we may not be able to do so. Dr. H. Weber, in his recently published Croonian Lectures on pulmonary consumption, seems to think it within the bounds of possibility that we may learn how to *starve the bacilli* by denying the patient certain articles of diet. It is difficult, however, to understand how it could be possible to deprive the tissues of the elements necessary for bacterial life, without serious injury to the body. Perhaps, again, some medicinal substance, harmless to man, may be discovered which will produce such an effect upon the tissues as to render them unfit soil for the growth of bacilli. Lastly, it is just conceivable that, without waging war with the parasites themselves, we may learn how to neutralise the effect of the chemical virus which they produce, and thus to render them inert.[a]

On the whole, we may as well face the fact that there is no immediate prospect of our being able to attack the bacillus directly, and consequently we must not be sanguine about proposed revolutions in our modes of treatment of phthisis. The most helpful consideration appears to be that this particular parasite is generally unable to effect a lodgment in the human body in conditions of health. Although the great distinction between septic and pathogenic organisms is that the latter have the power of thriving and multiplying in the living tissues, it must not be supposed that the tissues are absolutely unable to resist their encroachments. On the contrary, there is no doubt that a fierce battle is waged between the healthy tissues and the organisms; these attempting to spread, and nature trying to check their progress, sometimes by forming a line of demarcation and by the process of suppuration dividing the diseased from the healthy parts—sometimes by encapsuling the intruders, shutting them up in a dense-walled compartment, the contents of which are left to calcify. It would

[a] See a paper by Mr. Kingzett in the Brit Med. Journal, May 16, 1885. But unfortunately this would not be going to the root of the matter; so long as the bacilli continue to exist, new virus will be produced, and would it be practicable to supply the antidote constantly?

seem therefore that our best chance lies in assisting nature to carry on the war, by increasing the health and strength of the tissues. And although in the case of other parasites there could be very little prospect of a successful issue of the contest, it is quite certain that in the case of the tubercle bacillus the tissues are, under favourable conditions, able to gain the victory. Bearing this in mind, our great efforts should be to promote nutrition, to encourage circulation, to aid expansion of the lung, to check catarrh, and—most important of all—to supply the real food of the lung, and therefore indirectly the best antiseptic, pure air, and plenty of it. And if the general acceptance by the profession of the view that pulmonary phthisis is a disease intimately dependent upon the presence of micro-organisms, together with a recognition of all that is involved in that belief, should promote a wider adoption of these therapeutic measures, then the discovery of the tubercle bacillus will lead to great results.

ART. XVIII.—*Address at the Opening of the Session* 1885-6. Delivered in the Theatre of the Meath Hospital, November 2, 1885. By ARTHUR WYNNE FOOT, M.D., Univ. Dubl.; Senior Physician to the Meath Hospital; Fellow of the King and Queen's College of Physicians in Ireland; Professor of the Practice of Medicine, Royal College of Surgeons in Ireland, &c.

GENTLEMEN,—The duty has been entrusted to me by the Medical Board of inaugurating this Session, in the manner sanctioned by long-established custom, by the delivery of an Inaugural Address.

The obligation about to be undertaken is one which has more than once fallen to my lot, but my ideas as to the intention and aims of such an address have undergone no change in the time which has elapsed since I first essayed the task.

The course which I have marked out as suitable for the occasion is one which has reference to the interests of those who are making, or who are about to make, their first acquaintance with the practical realities of sickness as met with in a hospital. It is proposed to occupy your time, and possibly to engage your attention, with a few considerations relative to the object and method of your studies here, which may at least be assumed to concern, even if they fail to interest, the pupils.

This course has been adopted from a conviction that it is for the benefit of beginners undertakings such as the present are

intended. It is to and for beginners these addresses are introductory, their purport being to indicate the safest lines on which to work, the best methods of study, the stern necessity of early and continuous diligence, and the childish folly of idleness at any time, but most of all in the infancy of your career, when your seemingly superfluous time is often frittered away from ignorance of its value.

Though the faces of many present are familiar, and have been often seen at the bedside in the past or even previous sessions, yet I make no discrimination as respects your all being still beginners. I have no apprehension that any will take offence at the term, feeling certain that the further advanced any one of you may be, the more readily will he admit the propriety of the designation—the more freely will he assent that he *is* a beginner, because he will have already learned enough to see that the period of study, to which very artificial limits are assigned, is but the commencement of a course of education which ceases only with life itself. Willingly and with all sincerity I will myself head the category. In this hospital I began to learn, and in this hospital I continue to learn, day after day, and that so obviously that it would be the grossest form of self-deception to consider myself anything but a beginner. For with all true knowledge there comes, as the very surest sign and test of its reality, an ever-present sense of a still larger ignorance. The work of medical education by no means ceases with qualification—we are all students, or ought to be so, to the end of our lives.

There are, however, on the present occasion some words of appropriate greeting to be offered to the students, divided chronologically into new and old. The new are welcomed to the ranks of a profession whose progress in modern times has been equal to that of any other. During the last thirty years more has been achieved in it than in any previous century. A higher standard of education, better and more practical clinical teaching, and more thoroughness of acquirement, are telling favourably on its students. Silent workers—and they are many—in the wards, the laboratory, and the study, are evolving great truths, and continually fortifying the busy practitioner with fresh facts of inestimable value. The medical profession is being held in higher and higher estimation. There never was a time in which more zeal, more ability, and more loyalty, were found among its members, and there never was an age in which our exalted vocation

was pursued with such success as it is at the present day, for never was it able more certainly or more successfully to wage war against the ravages of disease and death!

The elder students are welcomed back, after a well-earned diastole af relaxation, to a renewal of their studies, in the full assurance that the foretaste they have had of clinical duties will have whetted their appetite for fresh and enlarged experience. Your primary difficulties—those attendant on the birth of effort—have been overcome, and with the elasticity of youth you are ready to spring forward to fresh work and new undertakings. I do not say the difficulties in *your* path this year will be less, but the problems will be more interesting for you, and your capacity for solving them will be greater. Your return here cannot but be regarded as testimony of your approval of the efforts made for your instruction, and it is certainly only natural that your teachers should feel more than ordinary interest in those who thus unmistakably show a sense of appreciation of their exertions. Some of you on your return may have felt as if you had forgotten all or a great part of the lessons of the past session, as if the knowledge previously acquired had become irrecoverably latent. This feeling of retrogression is due to the difficulty with which knowledge finds a real entrance into the mind so as to become permanently resident there. It is a common experience in mental evolution, and one at which you have no reason to feel dismayed. The knowledge which you felt last session was dissolved in your minds may not seem now to permeate you as it did then; but it is not lost, it has crystallised into perhaps a smaller bulk, but is there compact and secure. No knowledge gained by personal observation is or can be really lost, though it may not be instantaneously recalled to mind at a given time and moment. Repetition of the mental exercise by which it was first obtained will soon revivify the impression, and stamp it upon the memory in an ineffaceable manner. For the pictures drawn in our minds are laid on in fading colours, and if not from time to time refreshed are apt to vanish and disappear. Far better is it to be insensible to the progress you have made than to contemplate your advance with the bland self-satisfaction, which is the last doom of ignorance and folly.

Your teachers would be but indifferent observers of what is passing before them had they failed to perceive among the senior, and even among the junior students, many indications of promise afforded by unusual diligence, punctuality, and genuine interest in

their business on the part of not a few. These evidences of aptitude and inclination for work are hailed with pleasure, both as prognostic of the success of those who exhibit them, and also on account of the great benefit such examples are to the remainder of the students. The example of a few industrious men acts like a ferment and spreads in epidemic form through a class; and the great tidal waves of work which from time to time have arisen here, have been much more due to the influence and example of a few earnest workers among the students than to that of any energetic or impressive teacher. The idle and careless feel the influence of the contagion of work, and are often induced at the eleventh hour to dig up their buried talent, and to change an attitude of listless indifference into one of interested activity. And do not think that I have laden my tongue with the coarse brown sugar of flattery, or that I am saturated with the fretful vanity which lays traps for compliments, if I express an opinion that we are fortunate at present in having an unusually large number of working bees in this hive. I remember sessions when there were many such and when there were few such, but none when there were, taking them all round, a greater number of earnest, thoughtful, capable students—good examples to the juniors—ready and willing to work, considerate and respectful to the sick.

Beginners here are like children laid at the gates of a new world, of which the sights and sounds, and even the smells, are novel sensations. Hovering between the wish and the inability to do something, the beginner may well feel perplexed and bewildered with the strange variety of experiences among which he finds himself placed. It is very necessary, therefore, that a beginner should have definite notions of his object in coming here, and of the best way of accomplishing it. The object of your study here is Disease in all its relationships, meaning by disease every deviation from the normal condition of the body, either as regards its structure or its functions – in other words, your object in coming here is to learn the Art of how to heal, cure, or minister relief to men, women, or children who may have come to harm from sickness, accident, or any other bodily or mental calamity. An endless panorama of disease will pass before your eyes in the wards of this or of any other large general hospital, affording realistic presentations of all the ills that flesh is heir to. Any failure to recognise typical disease when you meet it at a future time will generally be due to neglect of your present opportunities of impressing its

characters on the mysterious retina of the memory, or perhaps to your having looked at it through the spectacles of books in preference to studying the original at the bedside.

The reason why hospital attendance is a matter of such vital importance, such indispensable necessity, is this, that it is only in such a place, where each and every form of illness and injury can be seen and examined, that you can acquire the familiarity with the ways of the sick, and the skill in the management of disease which are the essential qualifications for a medical life. Elsewhere you may read about sick people or hear about sick people, but here you can see them with your own eyes, and it will not take you long to find out how much more vivid and lasting are your impressions of disease when derived from attentive inspection of living illustrations than when based on what are at the best but second-hand descriptions or paper copies. All you may read or hear about sickness and sick people, if it is to be of any practical use, must be supplemented by the information obtainable here (or in similar institutions) beside and among the beds of the patients. The Art of Surgery, Medicine, and Midwifery, is learned and is practised at the bedside, whether the object of your assistance be lying on a straw pallet upon the ground, or "in the perfumed chambers of the great, under the canopies of costly state." To those who look forward to practising their profession the hospital is what the dissecting-room is to the anatomist, the laboratory to the chemist, the gymnasium to the athlete—it is the place where they have the opportunity of acquiring skill, practice, and knowledge of their Art.

It is the only place in which you can acquire some experience of the working of disease on human bodies. This quality is highly thought of by the public, and is by them very generally assumed to be a special and essential attribute of age. There is nothing which makes a young man feel more keenly the chilling disadvantages of juniority than his supposed deficiency in this commodity, when his assumed lack of it is made an objection to his being given some appointment he is in search of. Yet the amount of experience—real, useful, clinical experience—which an attentive and observant student can acquire during his period of hospital study, is often ample provision for him to start in life with. I am strictly within the limits of veracity when I say that on more than one occasion I have known the experience of an industrious student to have been quite large enough to contrast very favourably with that of some

who were certainly older, and who passed for wiser persons. A want of experience in those who undertake any practical art is so frequently attended with disastrous results that it cannot be felt unreasonable that some clinical information should be forthcoming on the part of those who hope shortly to practise the art of medicine. The value and the cost of experience are indicated in many trite and well-known aphorisms. Experience is the very best of teachers, but she charges very high for her instruction. Experience sometimes costs much more than it is worth, but many refuse to learn at any less price. It is often dear and bitter to the purchaser, who may have to repent in sackcloth and ashes, the price he has paid for it, for it may have been purchased at the cost of human life. Experience thus obtained cannot but be an unwelcome subject of reminiscence at such times as the burial places of the memory give up their dead, and the thoughts arise that it might have been otherwise:

> "For of all sad words of tongue or pen,
> The saddest are these—'It might have been.'"

The hospital is your school of experience. It is for each of you a garden of the Hesperides, into which you may at any time enter and pluck the golden apples from the laden boughs. Though the dragon of responsibility is there he will not meddle with you. It is your teachers he keeps his eyes on.

It is pitiably foolish to neglect hospital attendance, and to throw away the invaluable opportunities it affords you of acquiring experience without risk or trouble. There is no profession, art, or even trade, in which any but a madman would embark unprovided with a store of practical knowledge, such knowledge as alone will lead to his doing well whatever particular work he undertakes.

Hospital attendance, under the new system of study, is wholly optional for a student in his first year; it is not compulsory. But it will be no encroachment upon the time devoted to his technical pursuits to spend an hour or two in the hospital wards every morning in the week. Although he may not take in a great deal of what he hears, he can see there much which will be intelligible, and he will be but imperfectly adapted for the profession if his regular daily visits fail to be of unmistakable advantage to him. Trousseau, one of the wisest physicians and best clinical teachers of modern times, emphatically says—"From the day on which a young man wishes to

be a physician he ought to attend the hospitals." If you want a man to become a tea merchant you do not tell him to read books about China or about tea, but you put him into a tea merchant's office where he has opportunities of handling, smelling, and tasting tea. Without the sort of knowledge which can be gained only in this practical way, his exploits as a tea merchant will soon come to a bankrupt termination. If you want a man to be a doctor he must frequent a hospital. It is only there he can gain proficiency in the inner art of medicine. Anatomy, physiology, and chemistry, indispensable though they be in medical education, are not the A B C of practical medicine. One may know them all and yet be unfit to treat a common case of disease. "Mere anatomists," says Mery, "are like the porters of Paris, who are well acquainted with all its streets, and even its lanes and alleys, but know nothing of what is going on within the houses." However, by attending hospital you will be enabled to pursue each of these contributory sciences with a pleasure not othewise to be enjoyed, for you will get glimpses of their profound applications, and with benefits which cannot otherwise be calculated upon, for you will have repeated proofs of their intimate relationship to the art of medicine. A beginner here may possibly do little more at first than accustom himself to the routine and discipline of the house by attending, at the stated hour, the teacher on duty. He may not be able at first to do much more than look about him. But even that will be of use to him. People have always looked, or tried to see, when they wished to acquire information about any new thing. It is a truism, on which it is needless to dilate, that the way to the understanding is through the senses, that in the young the senses are more alert than the intelligence, and that the earliest teaching should be addressed to the eyes and ears rather than to the reflective powers. By taking pains to be in the wards as much and as regularly as possible, a beginner will at least be able to hear what the patients complain of, to pick up the elementary characters of disease, to take notice of the signs of sickness, to observe the symptoms of danger, or of the approach of death, to watch the effects of treatment and the evidences of recovery. By following your teachers at their appointed hours, imitating their manner, noting their proceedings, picking up the odds and ends of their experience, and looking with both your eyes when they say, "See here," or "See there," you will unconsciously accumulate a stock of knowledge, multifarious it may be, but the

good of which will not be fully known till after-years have explained and confirmed its worth.

After a short time the beginner will have to do something more than look on. He must commence to observe for himself in an independent and systematic manner. For merely to have seen disease and to really know disease are two very different things, and a casual passing glance at a case of sickness is not for a moment to be confounded with a knowledge of it. As well might one persuade himself that he was on terms of intimacy with a chance acquaintance because he had been once introduced to him in a crowded room. Such a momentary introduction does not warrant any familiarity, and the presumption that it does may lead to an unpleasant rebuff; so one who undertakes to meddle with disease, whose characters he only knows by sight, runs very great risk of finding his overtures terminate in a complication of disasters. As soon as the beginner feels equal to it, and the ability may be expected from any average man in the course of his first year, he should take personal charge of some simple and easy case. The teachers in either the surgical or medical wards are only too willing to recognise this hopeful sign of independent action in a student, and he has but to express such a wish to have it gratified. In this manner the pupil is brought into close quarters with the object of his study. By having immediate cognisance through his own, rather than mediate through his teacher's mind, of the materials of his study, he begins to comprehend as well as apprehend his business (for the causes of things often lie deep beneath the surface of appearances), and he commences the actual practice of his art, free from the distracting influence of personal responsibility since he acts under the master's supervision and has his assistance to appeal to in perplexity.

Like any other art, that of medicine is to be learned only by its exercise and use. The sooner any student begins to employ his powers in its *exercise* the better. This is the real way to learn medicine in the opinion of the celebrated Sydenham, who is justly regarded as the chief of English practical physicians, considered by some to rank second to the divine Hippocrates alone, and whose name was held in such reverence by the illustrious Boerhaave that he never mentioned it before his class without raising his hat. In a letter to a medical friend Sydenham has left the following account of his early professional life:—"Having returned to London, I began the practice of medicine, which when I studied

anxiously with most intent eye and utmost diligence, I came to this conviction, which to this day increases in strength, that our art is not to be better learned than by its exercise and use; and that it is likely in every case to prove true, that those who have directed their eyes and their mind, the most accurately and diligently, to the natural phenomena of diseases, will excel in eliciting and applying the true indications of cure." All the great men who have contributed to the lustre of the medical profession have proclaimed the absolute necessity of the observation of clinical facts; it is at the bedside the mind is brought into direct contact with the facts in question—living, breathing, speaking facts. The crowning excellence in every branch of the profession is consummate ability in clinical observation. This ability cannot be transmitted to others, for it is incommunicable, but the way in which it is obtained can be indicated, and is over and over again indicated here by example as well as precept. It is arrived at by attention, industry, and patience. The road is long, slow, and difficult, and there is no short, rapid, easy path to it. Many will not attempt it at all, and others give it up in despair.

That ability in clinical observation is the capital accomplishment of a surgeon as well as of a physician you may gather from the words of Sir Philip Crampton, who was for sixty years surgeon to this hospital, and whose name still stands without a rival in the aristocracy of Irish surgery. In an Introductory Lecture delivered in this hospital (Nov. 4th, 1839) he used the following words:—"Now, I am sorry to say that the path of clinical observation is neither short nor pleasant; in truth nothing but a full and entire conviction that it is the only path (not the best), but the only path which leads to professional success, could ever induce the medical student to pursue it, and it will prove one of the chief objects of this address to press this conviction home to the understanding of every man who intends to devote himself to the practice of the healing art."

This was no isolated promulgation of his opinion, for for seventeen successive years, prior to the one in which the Address, from which I have just quoted, was delivered, Sir Philip had opened the winter sessions here with a lecture, which (to use his own words) was "explanatory of the nature and importance of clinical observation and instruction." This annual reiteration of such an opinion, with all the emphasis his commanding position, with all the weight his vast experience, with all the charm his un-

faltering eloquence, could impart to it, is ample proof that it should still be the key-note, or at least the dominant chord, of the theme on these occasions; and though I neither think nor feel that it is within my competence in any way to rival the efforts of such a predecessor, still it may not be unreasonable to cherish a hope that some echo, however feeble, of this great master's sentiments, whispered down the corridors of time, may strike upon hearing ears to-day! The path of clinical observation is long and slow and difficult, because such observation must be rigorously exact and minutely particular, but it is not from the rose the bee gathers most honey, but often from acrid and unattractive blossoms. All investigations into the phenomena of nature must begin by the observation of facts, yet few are fully aware of the difficulty of the art of simple observation. To observe properly in the simplest of the physical sciences often requires a long and severe training. The difficulty of arriving at the actual truth by direct observation is sometimes so great, when contrasted with the ease with which an hypothesis is made, that it ceases to be wondered at that theory takes the place of observation in the views of those who are not devoted to bedside study. "The greatest thing," says Ruskin, "a human soul ever does in this world is to see something and tell what he saw in a plain way. Hundreds of people can talk for one that can think, but thousands can think for one who can see." The evolution of your natural power of observation, be it great or small, must be carefully superintended, if its growth is to be steady and if it is to arrive at maturity without succumbing to disease. It should, at all events at first, be concentrated upon a few cases, and those of an elementary nature. Looking at everything generally ends in remembering nothing except externals. Since, in the words of Locke, it cannot be hoped that the pupil "should have time and strength to learn all things, most pains should be taken about that which is most necessary; and that principally looked after which will be of most and frequentest use to him."

The path of clinical observation must be long when you remember that there is no finality in medicine. Medical education can never be said to be completed. Even proficiency in it is the object of a life-long study. In the three or four years spent before the legal qualification is obtained, you can, at best, but learn the rudiments of an art whose bounds are never reached. Men of the highest ability, after continuous devotion of their lives to its service, find at the end that they are only on the outskirts of a

knowledge of it, and are compelled to admit, with the Persian Philosopher, that the little they know is nothing, what they do not know is immense. You will find that it is difficult when you come to feel the strain of responsibility and anxiety on both mind and body, the frequent interruptions to your rest and pleasure, the efforts necessary to keep abreast of intellectual progress; you will find that your real work has only begun when you have put on your professional harness, that your student work was but play to it, and you will perceive something of the force of the words which Velpeau whispered to Nélaton, as his lips were quivering in death, "*Travaillons toujours.*" It is from clinical observation you will acquire proficiency in the inner art of medicine; the outer science is more or less optional for each man to pursue, according to his leisure, his opportunities, and his capacity; it need not be exaggerated into a matter of necessity for all. Of this you may be certain, that though you may be conversant with all the mysteries of scientific medicine, if you are unprovided with the sagacity, and skill, and readiness which are the outcome of bedside study, you will not be likely to be useful or successful practitioners.

The out-patient department affords a field of study in which a beginner can spend much time with advantage. The greater part of my first two years I spent at work in the Dispensary. The pabulum presented there is better suited for the lacteal period of study than the more serious and complicated cases under treatment in the wards. The student sees there the more trivial ailments, such as he will oftenest meet, and frequently be best remunerated by in after-life. He has constant opportunities, if he will take advantage of them, of educating his senses—touch, sight, smell, and hearing. There is some danger in this very instrumental age that a student may, by depending too much on mechanical aids, neglect the beautifully delicate apparatus he is provided with gratis by nature, and so fall very far short of that ability which so largely contributed to the success of our medical predecessors, who had to rely on their unassisted senses. The aphorism—"Sine thermometro nulla therapeia" may be true, and I do not cavil at it, but in these days when we try to measure everything, there is some risk of losing the *tactus eruditus* of our ancestors, and if any would say—"Well, lose it, we have better to replace it with," I would remind him that these natural instruments have the great advantages of portability, that no emergency is likely to catch you without them, and that in a large proportion of cases nothing else is absolutely required.

There are so many working men among the more advanced students that it perhaps might be better to leave the juniors to be inducted into the habit of work by the silent force of their daily example, than to endeavour by impassioned exhortation to stimulate them to exertion. And yet, I might appeal to you, by your filial regard for those who are making sacrifices for your advancement, not to allow this season of aptitude and inclination to slide away unimproved into the fathomless depths of the past, to mingle with the lost opportunities that are drowned therein. I might appeal to you, by all your hopes or dreams of success, not to sacrifice on the altar of neglect present advantages which may never again be offered to you. I might appeal to you by the time-honoured memories of this old Hospital, to emulate those youths who annually leave its walls, stamped with the hall-mark of its practical teaching, carrying their aid over sea and land to all who need it, irrespective of colour, creed, or character. And I will not lose this opportunity of pleading with you on each of these grounds to make the best use of your privileges in the interest of your friends, yourselves, your profession. I have been told it is in vain to do so, but with an earnest μὴ γένοιτο, I deprecate the notion, for I have myself felt the influence of these Addresses when they had the ring of truth and sincerity, when precept was followed up by practice, when the cry was more "Come on" than "Go on." I know how their tones have startled the apathetic from the sleep of indifference, how the fervent air of emotion has fanned into a blaze latent sparks of zeal, how their arrowy words have pricked, as the touch of golden spurs, the eager to redoubled exertions; and am I to be told, or if so am I to believe that there are not here to-day fresh young hearts, as sensitive to the touch of sympathetic impulses, as ready to strike responsive chords consonant with the vibrations of the speaker's heart, as there were twenty years ago!

Gentlemen, it would have been much easier, and would have been a great economy of nervous force, for me on the present occasion to have posed as a scientist, and poured on your bewildered ears a torrent of phraseology in the shape of a disquisition on the position or prospects of advanced medicine. Perhaps the entertainment, I will not venture to say the advantage, of the distinguished company who honour with their presence your inaugural ceremony, might have been better served, but I think your time would have been wasted, and your patience trifled with; and I fear the lion's skin assumed for the moment would soon have dropped from my

shoulders when you would have found out the next day in the wards that I was but an ordinary learner like yourselves. I did not know any better way than that I have taken of discharging the duty entrusted to me, and should this Address prove only memorable for its weariness, only conspicuous for being "one more attempt to polish up a threadbare subject," I will ask for your indulgent consideration on the grounds of an implicit and unshaken belief in the inestimable value and in the absolute necessity of "Clinical Observation."

ART. XIX.—*Arthritis, arising from Peripheral Nerve Lesions.* By J. M'ARDLE, F.R.C.S.I.; Surgeon to St. Vincent's Hospital.

IN using the name neurotic arthritis for the following, I do so with reserve, and less as an effort at representing my own opinion of the cases to which I wish to call attention, than as an endeavour to draw a line of distinction between them and those cases of doubtful origin, usually styled rheumatic gout.

Many will, no doubt, look upon some of them as fairly typical cases of that affection; even should they do so, I shall not question the propriety of thus naming them, so long as I can prove that peripheral nerve lessions have, in each of them, produced the dystrophy, and that the removal of the nerve disturbance effectually removed the joint trouble.

In reference to the pathology of rheumatic arthritis, I question if many of the cases so called could not be traced to a neural origin, and be treated more rationally were such origin more frequently remembered.

In his paper on chronic rheumatic arthritis, read at the meeting of the British Medical Association, at Belfast, in 1884, Dr. Dyce Duckworth stated very clearly the chief views put forward in explanation of the origin of this affection, and in his concluding remarks he said:—"The nervous system is markedly implicated in the arthritic diathesis, and many of the features, both of rheumatic and gouty disease, point to the probability of their being a trophic centre for the joints situated in the spinal cord; and a morbid and irritable condition of this centre may result in a definite neurosis, which may be inherited, acquired, or modified." That the injury of this centre, in the course of spinal disease, is capable of producing destructive changes in joints, has been very clearly shown

by Charcot; and in my last paper on this subject I noted several cases strongly supporting this view. That the normal action of this centre can be interfered with by impulses conveyed to it from the periphery—that perversion of function occurs, resulting in dystrophy at the parts over which it presides, is the view I hold as to the pathology of the cases I have collected below. I am quite convinced that in many of the cases we are in the habit of calling rheumatic gout, evidence of protracted nerve irritation would be forthcoming, if sought for. In Case IV. the patient had all the symptoms of rheumatic arthritis, and yet, on removal of the severe uterine irritation, they disappeared, and did not recur until a second disturbance of uterine function took place. In Case VII. the symptoms were equally well marked, and yet, on removing the irritation, the arthritis disappeared rapidly. Such cases as I have noted in a former paper, and those which follow, have led me to the conclusion that peripheral irritative lesions of nerves produce a condition indistinguishable from rheumatic arthritis, whilst central degeneration changes cause such joint troubles as have been described by Charcot. In my paper on arthritis of central origin, I have brought forward cases in support of the latter conclusion. I now submit the following in proof of the former:—

Case I.—*Necrosis of last Phalanx of Index Finger, followed by Arthritis of neighbouring Phalangeal Joints of Shoulder and Elbow, wasting and numbness of Limb; Recovery.*—M. B., aged forty, admitted into St. Vincent's Hospital, suffering from necrosis of last phalanx of middle finger, resulting from a paronychia, which had been set up some months previously, by injury with a needle. Before admission, numbness had set in along the forearm, rapid wasting of the muscles had commenced, and choreic movement had been noticed; when cicatrisation commenced, numbness became more marked, and enlargement and tenderness of phalangeal joints of neighbouring fingers, with synovial effusion into and tenderness about elbow and shoulder, took place. As soon as joint trouble appeared, a large blister was applied over each side of the spine, from the fourth cervical to the first dorsal vertebræ. Emollient dressings were applied to the finger, and in a few days the articular trouble disappeared, and with it the numbness.

Case II.—*Injury of Median Nerve, followed by Inflammation of Wrist and Smaller Joints of Hand, and Atrophy of Muscles and Bones of Forearm; Permanent Deformity.*—J. M., aged twenty-six, admitted to St. Vincent's Hospital, suffering from a painful swelling immediately above elbow-joint and in front of a point where fracture had occurred twenty years

previously. After exertion this tumour became exceedingly tender, and the slightest pressure on it caused numbness in the area supplied by the median nerve. Vesicles were constantly forming over the back of hand and on both surfaces of forearm. The wrist-joint had become ankylosed; the skin over the dorsal aspect of hand and forearm was glossy; the nails had become thickened and very brittle; the end of radius and ulna, the metacarpo-phalangeal and phalangeal joints were enlarged, the arm being always blue and cold. The muscles of the forearm were greatly atrophied, and the bones were two inches shorter than those of the sound side. He suffered from severe pain, in all the smaller joints, when tumour at elbow was injured by over-exertion or otherwise, and then the vesicles on arm became numerous.

Treatment.—Inflammatory action was subdued and sedative dressing applied; and, although the nutrition of the limb remained imperfect, the vesicles never reappeared, nor did the pain return.

In this case it is evident the local irritation had been the cause of the atrophic changes, since the withdrawal of all causes of irritation, and the application of sedatives, prevented a recurrence of pain and vesiculation. This case agrees, in the main, with the case recorded by Dr. Henschen, as noted hereafter.

Case III.—*Injury of Posterior Interosseous Nerve, followed by Arthritis of the Phalangeal and Metacarpo-phalangeal Joints; Recovery.*—J. C., aged eighteen years, came under my care on the 28th of November, 1883, two months after receipt of a severe lacerated wound on the dorsal aspect of forearm. Union had taken place, leaving a deep, irregular cicatrix, many points of which were very painful; there was doughy œdema of the hand and forearm; several vesicles, as large as a split pea, appeared on the flexor aspect of the wrist. The patient was unable to move the fingers, and the wrist-joint, which was considerably enlarged, could not be moved without severe pain. The boy was naturally of a strong constitution; but, since the joint trouble commenced, he had failed in strength considerably.

Treatment.—I divided the nerve filaments, going to the cicatrix subcutaneously, at the same time rendering that structure as movable as possible by raising it at depressed points. I then ordered a mixture of oleate of mercury and extract of belladonna, to be rubbed over the part operated upon.

In the course of a few days the pains in the joints disappeared, and in ten days the joints were movable and painless.

I have no doubt but that in this, as in Case II., ankylosis would have occurred, were the joints allowed to remain much longer unrelieved.

Case IV.—Mrs. K., aged forty-two years, came under my care on the

23rd of October, 1884. She complained of severe pain in the lower part of the back, a constricting pain round the inguinal regions; the right knee was enlarged, red, and tender; both elbows and wrists were similarly affected; her face was flushed, and she had slight headache; for three months there had been no menstrual flow.

Treatment.—Warm bath, five grains of calomel and ten grains of Dover's powder immediately after bath. Counter-irritation over lower part of spine by chloroform and morphine liniment, and mixture of perchloride of mercury three times a day.

The menses appeared the second day of treatment, and on the sixth all the symptoms had disappeared. Here the irritation of a congested uterus was undoubtedly the cause of distress, as well in the joints as in other parts of the body.

Case V.—*Inflammation of the Brachial Plexus, causing severe Arthritis at Elbow, Wrist, and Carpus.*—Mrs. M., aged thirty-five years, came under my care on the 7th of February, 1885. She had fallen from a polo-cart early in November, her shoulder receiving the entire shock of the fall; synovitis of the shoulder-joint set in, but by judicious treatment the arm became quite useful in a few weeks. In the end of December she had her arm suddenly twisted, and this time pain set in at the upper and inner part of the arm, and soon a hard and very painful swelling appeared on the outer wall of the axilla; by the application of sedatives and by constantly fomenting the shoulder, the pain was slightly relieved, but the hardness and swelling remained; and in the course of the following month severe pain developed in the upper dorsal region and along the nerves of the arm. The elbow, wrist, and phalangeal joints became enlarged and painful, and when brought to me in consultation I found her as follows:—She was pale and emaciated, excessively nervous, and suffered much from sleeplessness; the joints of the hand were nodular and very painful, and there was well-marked synovitis at elbow and shoulder-joints; the arm was greatly wasted, and all the nerve-trunks could be traced out by the patient, owing to the constant pain felt in the course of each; a hard, painful swelling occupied the outer wall of the axilla, engaging the brachial plexus; severe pain was felt from this point, through subclavian triangle and across the neighbourhood of the lower cervical and upper dorsal vertebræ. The patient was unable to use the arm, every attempt at moving the fingers, even, causing excruciating pain in all the joints and along the nerves of the limb. Over the dorsal aspect of shoulder and down the arm a crop of vesicles appeared and caused her considerable uneasiness. She avoided using the sound arm, as much exertion with it increased the pain in the back, rendered the bad arm numb, and caused a constricting pain in the upper dorsal and lower cervical regions.

Treatment.—Blister on each side of spine in cervico-dorsal region; then one from coracoid process of scapula to upper third of arm; internally, chloride of ammonium and perchloride of mercury.

The blister to spine gave her great relief in a few hours; in a few days the herpetic eruption disappeared, and the good arm could be used without producing any of the ill effects above referred to. The swelling at hand and elbow gradually diminished, but the induration in the axilla continuing, I ordered liniment of iodine to be brushed over that part. After continuing the mercury for three weeks, iodide of potassium was substituted, and in a short time she left town, using the arm freely.

In this case there was an undoubted neuritis of the brachial plexus and its branches; the inflammation of the joints had resisted all local treatment. The removal of the articular disease by curing the neuritis, convinced me that here was evidence of a descending neuritis, causing very painful articular osteitis.

Case VI.—P. R., aged twenty-nine years, admitted into St. Vincent's Hospital under my care, with bilateral dislocation of the lower jaw, of ten months' standing. Some days after I had reduced the dislocation, he drew my attention to a small sinus in the centre of his right popliteal space. An ichorous discharge was passing from it, and, deeply in the space, a firm swelling could be felt, pressure on which caused severe pain; the knee and ankle-joints of the opposite side were swollen and tender, and he complained of severe pain in his back and in course of right sciatic nerve. The swelling was evidently the result of tubercular inflammation of glands in popliteal space and abscess formation. The sinus had formed two years before he came under my care, but had healed up several times in the interval, and the patient remarked that "when the sore healed the troublesome swellings of his joints disappeared." He was obliged to leave hospital in a few days, so that I was unable to follow out his history. My inability to report on this case I regret very much, since everything pointed to the peripheral irritation as the cause of articular trouble, and I felt certain that removal of the glands would result in a cure. The symptoms resembled those of so-called gonorrhœal rheumatism so much that, even in its incomplete condition, I have been tempted to introduce it here.

Case VII.—P. D., aged forty years, came under my care on the 10th July, 1885. His previous history is recorded in my paper on arthritis, in the June (1885) number of this Journal. The present attack arose thus:—When endeavouring to escape from a furious pig, he attempted to retard her progress by kicking at her; she received the great toe of his right foot in her mouth and bruised it well; swelling of this metatarso-phalangeal joint occurred very soon, and in a few hours the entire foot was

swollen, and the toe very painful. On the following day severe pain set in—in the back of his neck, in front and back of thigh, and in the lumbar region.

On the third day after receipt of injury, the right knee became swollen and painful; then the left hip, knee, and ankle became swollen, red, and tender in succession.

On the fourth day he suffered from vomiting, intercostal neuralgia; the pain in the nape of neck was very severe, and spasmodic twitchings in arms occurred; the right hand and wrist became œdematous, and all the joints painful. Local applications were useless; I ordered the spine to be painted with concentrated liniment of iodine, and perchloride of mercury to be given in doses of $\frac{1}{8}$th-grain. The pains subsided, but, on the sixth day, vomiting occurred after every dose of mercury, for which I substituted a mixture of citrate of potassium; this I continued until the eighth day, but pain and swelling returned, and I was obliged to again order mercury and counter-irritation over spine; this time the stomach did not reject the drug, which relieved the patient so much that, on the 23rd July—that is, thirteen days from onset—he was able to walk about his room. There was no return of swelling since. The heart has never been affected in the slightest degree in any of the attacks he has had, and in each of them central or peripheral nerve lesions acted a prominent part in the production of the joint mischief.

The appearance of the joints in this case resembled very much those in the case of uterine irritation, and in both cases counter-irritation over the spine gave marked relief.

Case VIII.—*Gonorrhœa followed by severe Dorso-lumbar Pain and Synovitis of Knee and Ankle-joints; Recovery.*—J. D., aged twenty-two years, was admitted into St. Vincent's Hospital, under my care, on the 8th of October, 1884. He had been under treatment for some weeks for rheumatism, and on admission he was pale and worn-looking, and he complained of severe pain in the lower part of his back, numbness in both legs, and a persistent soreness around both heels. Both his knee-joints were swollen and tender, and his ankles were stiff and painful. He was unable to move about, even in bed, owing to the severe pain in his back.

Treatment.—Soothing injections were applied to urethra; a blister three inches by one was ordered for each side of the dorsi-lumbar spine, and $\frac{1}{8}$th-gr. doses of perchloride of mercury were given internally. All local treatment was avoided. The blistering relieved the pain in the back in twenty-four hours, and a gradual subsidence of articular swelling taking place, the patient was able to be up and about on the fourth day, and in fourteen days he was quite himself.

There are many points in connection with this case which support the view that gonorrhœal rheumatism is due to the disturb-

ance of the centres in the spinal cord, set up by peripheral irritation, or by an ascending neuritis of the dorso-lumbar nerves.

1st. Severe dorso-lumbar pain, which is very difficult to account for, unless on this assumption.

2nd. The relief obtained by blistering the spine.

3rd. The peculiar pain in the heels is a very frequent symptom in cases of spinal hyperæmia.

4th. The disappearance of the joint symptoms, when the peripheral irritation was removed. Were the joint trouble of pyæmic nature, as suggested by some, the mortality would undoubtedly be much greater, and pus would be found in the joints, instead of the serous fluid which usually appears there in such cases.

Case IX.—*Injury of Knee, followed by severe Dorso-lumbar Pain and Synovitis of Hip and Ankle of same side.*—Miss L., aged sixteen years, came under my care on the 10th of February, 1885. Some months before she had fallen on her left knee, injuring it severely. Although the swelling had disappeared, the joint remained painful; and when I saw her, her condition was as follows:—The inner condyle of left femur was enlarged and very painful; the slightest movement of the joint caused great pain. She was unable to be about, and consequently her strength had failed very much. The muscles of left femoral and tibial regions were wasted; the skin of the entire limb was rough and desquamating; the foot was cold and clammy; there was pitting on pressure along the tibia; the ankle-joint was greatly swollen and stiff; the hip-joint was freely movable, but enlarged and painful, and she complained of a dragging pain in the back, and a constricting pain round the lower part of abdomen. There was tenderness on pressure over the lumbar spine, and any attempts at turning or sitting up caused an increase in the dorsal pain.

Treatment.—Leeches to knee and over lumbar region, powders of chalk and mercury, and rest in the recumbent position. The pain in the back remained, as also the stiffness and swelling of the ankle, but the knee was relieved. After three weeks' rest and treatment as above, I ordered a blister for each side of the spine, and found that in a few days the dorsal pain was greatly relieved. I then gave her small doses of perchloride of mercury, and repeated the blisters to the spine, which treatment resulted in the removal of the pain in back and in joints; the swelling soon subsided, and now the patient walks about with ease, the only trouble left being slight want of development of the injured limb.

This case is somewhat like one of the cases recorded by Herr J. Wolff in support of his view that irritation at any joint of a limb is capable of producing either atrophy or hypertrophy of that member, according to the condition of the patient.

In the above cases we have evidence of slight injury producing severe lesions, the points which attract our attention being the following:—

1st. The lesions followed partial rather than complete nerve destruction.

2nd. In traumatic cases the symptoms appeared at the period of cicatrisation.

3rd. The arthritis (unless arising from irritation of pelvic or abdominal viscera) was for a long time unilateral.

4th. The symptoms resembled those of the affections styled scarlatinal, alcoholic, and rheumatic arthritis.

5th. They were usually accompanied by chorea herpes neuritis, with which they ran a parallel course.

6th. When the nerve irritation is removed, a rapid disappearance of pain takes place, and gradual restoration of the joint function sets in.

The manner in which peripheral affections can produce central disturbance is variously explained. Thus Leyden and Lewisson suppose that inflammation is propagated along the nerves to the cord. Tiesler concludes, from his experiments, that inflammatory conditions of the cord may be set up by peripheral irritation, without inflammation of the intervening nerve-trunk taking place. Others, again, believe in the metastasis of the inflammatory process. The manner in which the derangement of the cord interferes with the function and nutrition of parts connected with it is also explained differently by the various authorities. In reference to this question, the following are the views at present put forward in explanation:—

1st. Charcot believes that trophic disturbances arise from the withdrawal of an influence, transmitted under normal conditions, from the so-called trophic centres to the periphery.

2nd. Schiff looks upon the affection as the result of vaso-motor paralysis.

3rd. Samuel believes that irritation of spinal trophic nerves is accountable for the peripheral lesions.

4th. Remak attributes the articular trouble to an affection of the sympathetic ganglia; while others, with Lewisson, hold that after the cord becomes affected, a descending neuritis occurs, leading to the dystrophy, by rendering transmissions of normal impulses impossible.

From the few observations I have been able to make in the *post-mortem* room, and from a consideration of the time which elapses

between the implication of the cord and that of the joint, I would be inclined to favour the view that a descending neuritis is answerable for the joint disease; and the fact that herpes and other cutaneous affections which undoubtedly arise from neuritis accompany and run a parallel course with this disease strongly supports this view.

That nerve irritation is frequently followed by articular trouble will be seen from the foregoing; and the following cases, from the practice of others, will, I think, show what an important factor nerve irritation is in the production of arthritis as well as other dystrophies.

In the *British Medical Journal*, December 6th, 1884, Dr. J. Stuart mentions a case in which rheumatism accompanied a very painful neuroma of the back of the forearm. When the tumour was removed, all traces of the rheumatism disappeared—that is, the irritation of the neuroma was capable of exciting a hyperæmic or other condition of the cord sufficient to destroy its trophic function, thus producing the distressing symptoms which entirely disappeared after its removal.

In *Langenbeck's Archiv*, Vol. XXX., page 807, Dr. A. Bidder notes a case in which, along with other trophic disturbances, the joints of the hand and fingers became inflamed and ankylosed as the result of fracture of both bones of the forearm, implicating the radial nerve.

This case resembles No. 2 of my series. In both the nerve was injured by the fractured bones, and the callus thrown out engaged the injured filaments, keeping up the irritation.

In the *Neurologisches Centralblatt* for 1883, Dr. Henschen notes a case of injury of the left ankle, followed by hemi-atrophy of the same side, accompanied by inflammation of all the joints of the affected limb. In this case a more diffuse, but still unilateral, affection of the cord was produced by the impulse ascending from the injured ankle, or by an ascending neuritis.

In the *Berlin klinisch. Woch.* for 1883, p. 692, Dr. Pauli records a case of severe joint inflammation following diphtheria, and speaks of it as arthritis diphtheritica. This case has all the characters of arthritis from peripheral nerve irritation, and probably resulted from an ascending neuritis of the pharangeal plexus. Dr. J. Wolff, in the same periodical, No. 28, 1883, and succeeding ones, discusses, in an exhaustive paper, the subject of trophic disturbances in primary joint disease, and gives it, as his opinion, that when atrophy

or hypertrophy occurs in all the bones of a limb in which a single joint is at fault, the cause must be sought in the disturbance of the nerve apparatus (Trophoneurosis), rather than in the inactivity of the limb or the destruction of the epiphysary cartilage. This has a direct bearing on the subject, as Case IX. of my list shows how injury of the knee produced severe dorso-lumbar pain, and then synovitis of hip and ankle-joints, with wasting of the muscles and œdema of the limb.

In the *British Medical Journal* for June, 1884, page 1142, Dr. Railton notes a case of rheumatism, so-called, arising in the course of gonorrhœa. He mentions that the symptoms point to a pyæmic origin for the trouble. I have noted a case like this (No. 8), and given my reasons for including it in those of neurotic origin.

EXTIRPATION OF THE LARYNX FOR MALIGNANT DISEASE.

At the eighteenth annual meeting of the Canada Medical Association Dr. Roswell Park, of Buffalo, reported to the Surgical Section a successful case of extirpation of the larynx for malignant disease, and exhibited the specimen, as well as a model, of an artificial larynx, after Gussenbauer's pattern. The case was that of a man, aged sixty-four, who for many years had been troubled with hoarseness. For a year past he had lost his voice altogether; last fall he consulted a specialist, who diagnosticated papillomatous disease of the larynx undergoing cancerous degeneration. He had previously undergone several operations for removal of the papillomatous growths. He was seen by Dr. Park on the 14th of last June, and at that time tracheotomy was performed to relieve the difficulty of breathing. After some days the granulation tissue about the tracheotomy wound was so exuberant that it forced out the tube, so extirpation of the whole larynx was advised and agreed to by the patient. The operation was performed on the 28th of last June. It was very tedious, but attended with but little hæmorrhage. The epiglottis was left behind, and the first ring of the trachea removed with the larynx. The wound was packed with iodoform gauze and healed rapidly. The patient was fed for the first few weeks by a tube passed through the wound. Since then he has taken all his nourishment by the mouth. He is now wearing an artificial larynx, and can swallow well and talk with ease. The removed larynx was exhibited and showed the malignant disease completely blocking up the rima glottidis. The affection was apparently confined to the larynx. Dr. Park said that, up to the present time, 94 extirpations of the larynx had been reported, and that this was the 95th, and the third extirpation that had been performed on this, the American, Continent.—*Medical News*, Sept. 12, 1885.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Helps to Health. By HENRY C. BURDETT. London: Kegan Paul, Trench & Co. 1885. 8vo, pp. 249.

WE have given the title of this book in miniature—in full it runs "Helps to Health: the Habitation, the Nursery, the School-room, and the Person, with a chapter on Pleasure and Health Resorts"—a sufficiently comprehensive range of subject-matter, to which the author has done ample justice. Mr. Burdett is well-known as an ardent sanitarian and a prolific writer upon hospital construction and management, so that any work from his pen is welcomed and appreciated. That now under review contains a great deal of common sense, and is well and withal pleasantly written. No fault can be found with such statements as the following, in the first chapter on "The Nursery:"—"The old division into day and night nursery is still the best and most practicable—for many reasons the top floor is the most convenient for these rooms." "An open fire-place only is admissible for the warming of the nursery; its use as a ventilator is too great to allow of its abolition." "It is a great mistake to imagine that night air is dangerous to children. As a matter of fact, in towns the night air is the purest." "Regularity is the first principle to be strictly followed in the nursery." "Cleanliness is another point to be insisted upon." "The authority of the nurse must at all times be upheld, and the child must not be allowed to appeal to its mother in the hope of getting something just forbidden by the nurse."

The tyranny of "fashion" over the female mind is satirised by Mr. Burdett in a particularly happy vein. Thus, writing about cosmetics, he observes that they are "used generally to conceal some skin eruption or supposed excess of colour; in other cases to impart colour where, *according to the vagrant fancy of the female mind*, it is supposed to be lacking." He adds: "It need hardly be said that their use can never be advised." Again: "It is probably useless to write against any mode of dressing ladies' hair, as fashion rather than healthiness will prevail in most female minds." Speaking of

the corset, he says: "This, with its tight lacing, is a known evil. It is useless to say that it is necessary, for it is quite certain that women are as well able to do without it as men are." "The 'full-dress' of ladies, without much precaution, is very dangerous, and leads often to serious results." But neither does he spare the shortcomings of fashion as regards the sterner sex; for in his opinion, "much of the baldness of the present day is due to the style of hat, which presses tightly on the head, and interferes with the circulation of blood in the vessels." He considers that so-called "Clergyman's sore throat" results from a faulty use of the voice—"the sermon is carried on by a multitude of energetic pumpings and upheavals of the whole chest, which are not only perfectly unnecessary, but throw immense strain on the vocal organs."

But the book abounds with good common sense, of which an example will be found in the author's remarks about alcohol, which are judicious, temperate, and convincing. His conclusions on this subject are as follows:—(1.) Alcohol is unnecessary for healthy people, and occasionally harmful. (2.) Its moderate use does to most people no harm, and its discontinuance may lead to gluttony. (3.) To many people on the confines of health leading exciting, wearying lives, and to those sometimes doing hard mental work, its use is beneficial. (4.) It is frequently beneficial to the aged. At the same time we do not agree with all he says. For instance, the statement as to vaccination, that "every parent should insist on having four places made," does not commend itself to us either for felicity of expression or for soundness of doctrine. We believe that one, or at most two, characteristic vaccination marks are a sufficient guarantee of protection against the dangers of small-pox. The author, again, recommends well-powdered starch as a dusting powder for infants, but lycopodium will be found much more convenient, as it does not form a paste, or cake afterwards when it dries.

The number and variety of topics discussed in this small work surprise the reader—the nursery, the school, care of the person, food and drink, work, rest, exercise and recreation, the choice of a house, warnings to intending householders, the structure and interior arrangements of the house, ventilation, warming and lighting, dust and removal of refuse, health resorts, the sanitary powers and duties of the citizen, and a valuable list of urban sanitary officials in England and Wales, altogether form an *olla podrida* of sanitary science.

It is to be regretted that Ireland and things Irish are practically ignored by the author. The only allusion to this country which we have come across in the book is the bare mention of "Queenstown" in a long list of relaxing health-resorts. Why are not Rostrevor and Glengariffe named in this connexion, or Portrush, Newcastle, Ballybrack, and Bray, among the more bracing sea-side resorts? Or why is there no allusion to the baths at Blarney, or to the waters of Lisdoonvarna? This neglect is the more strange because Mr. Burdett has visited Ireland on several occasions, and more particularly Dublin and its environs.

In conclusion, we can confidently recommend this book to what, we trust, will be a wide circle of professional and non-professional readers as a reliable, interesting, and well-written guide to health, remembering the epigram of Martial embossed on the cover—"Life is not to live, but to be well."

Contributions to Pathology and the Practice of Medicine. By JOHN RICHARD WARDELL, M.D., Edin. London: H. K. Lewis, 136 Gower-street, W.C. 1885. Pp. 807.

THIS book is a collection of fifty articles, the greater number of which have from time to time appeared in certain of the periodicals. All of them are on subjects of importance, and there is a choice among them for all readers. There are articles on Obesity, Infanticide, Tæniæ, and Chronic Glossitis, which show the variety of matters included in the volume. Three of the articles are of such length and importance in detail as to more nearly resemble essays; these are—Relapsing Fever (pp. 174), Diseases of the Spleen (pp. 81), and Pleuritic, Serous, and Purulent Effusions (pp. 52.)

The book, which is dedicated to Sir William Jenner and Dr. Richard Quain, is very well turned out by the publisher, and will be a valuable addition to any library.

A Handbook of the Theory and Practice of Medicine. By FREDERICK T. ROBERTS, M.D., B.Sc., F.R.C.P. Sixth Edition. London: H. K. Lewis. 1885. 8vo. Pp. 1,012.

THE popularity of this work and the appearance of several editions in rapid succession would disarm hostile criticism, even were we inclined thereto. But the reverse is the case, for we have already

frequently expressed a favourable opinion of Dr. Roberts' Handbook of Medicine, and the present edition deserves all the praise awarded to its predecessors.

The author keeps well abreast of the present standard of medical knowledge. He also makes particular mention of the principal remedial agents which have recently been introduced into the treatment of disease. For example, in a short appendix, he gives a *précis* of the therapeutical value and effects of antipyrin and of cocain. He also alludes to the use of cascara sagrada in chronic constipation, of jaborandi and pilocarpin in acute Bright's disease, of nitrite of amyl, nitrite of sodium, and nitro-glycerine in angina pectoris, and so on. It is to be regretted that, with the exception of the two remedies mentioned in the appendix, there is no entry of the names of drugs in the otherwise copious index to the volume.

The chapters on "Diseases of the Nervous System" have been revised by Dr. Charles Edward Beevor, Assistant-Physician to the National Hospital for the Paralysed and Epileptic, at whose suggestion the author has made some alteration in the arrangement of these diseases.

There can be little, if any, doubt that the present issue will command the confidence of teachers and students alike, and we venture to forecast the appearance of the seventh edition at no distant date.

Index Catalogue of the Library of the Surgeon-General's Office, United States Army. Vol. VI. HEASTIE-INSFELDT. Washington: Government Printing Office. 1855. 8vo. Pp 1,051.

THE present and sixth volume was issued from the Surgeon-General's office at Washington, D.C., by Surgeon J. S. Billings, on June 20, 1885. It includes 7,900 author-titles, representing 2,543 volumes and 7,250 pamphlets. It also includes 14,590 subject-titles of separate books and pamphlets, and 35,290 titles of articles in periodicals.

The six volumes now published include 58,886 author-titles, representing 33,265 volumes and 47,325 pamphlets; as well as 64,142 subject-titles of separate books and pamphlets, and no less than 219,154 titles of journal articles; besides 4,335 "portraits" contained in Volume III.

When it is completed, this work will be a monument more enduring than brass of patient industry and unflagging perseverance.

A Theoretical and Practical Treatise on the Hæmorrhoidal Disease, giving its History, Nature, Causes, Pathology, Diagnosis, and Treatment. By WILLIAM BODENHAMER, A.M., M.D. New York: Wm. Wood & Co. 1884.

IN this verbose monograph of 297 pages Dr. Bodenhamer gives a *résumé* of what has previously been written on this subject, but he manifests a decided predilection for the authors who have written in the last or previous centuries, and enters into a long discussion as to whether the emerods of the Bible are to be considered synonymous with the hæmorrhoids as at present described. He indeed claims to have traced the disease back to a pre-historic era.

In his chapters on the ætiology he gives a truly alarming list of causes for this common disease, so that the reader may well ask how can any one escape. For instance, he says—"Terror, fear, rage, sorrow, ennui, restlessness, or nostalgia may be a direct cause of hæmorrhoids." The continued references to be found on almost every page to authors who are long out of date renders the work most tiresome reading, and the modern views of pathology and treatment which one would naturally look for in a monograph upon such an important subject are conspicuous by their absence. The illustrations are very indifferent, and not at all up to the beautiful woodcuts and chromos to be found in most modern American medical works. The book concludes with a list—extending over thirty-four closely printed pages—of authorities on rectal disease.

On Diseases of the Rectum and Anus. By HARRISON CRIPPS, F.R.C.S., Assistant-Surgeon, St. Bartholomew's Hospital, &c. London: J. and A. Churchill. 1884. Pp. 429.

THE well-known book on Cancer of the Rectum, by the same author, makes us hail with pleasure the present volume, which, while including the former with the additions rendered necessary by his increased experience, forms now a complete treatise on rectal surgery. The first twenty pages are devoted to the anatomy and physiology of the lower bowel, in which we find some observations on the distance of the peritoneal pouch from the anus; his measurements were made by injecting the peritoneal cavity with plaster-of-Paris, and thrusting a needle in until the point impinges upon the plaster. We consider, however, that such measurements are but of limited practical utility in defining the extent to which a diseased rectum may be removed without implicating the peritoneum. For, in the first place, the anus is so extremely movable, that whether it is

protruded or retracted, makes upwards of an inch difference in the measurement of any given case; and the infiltration of tissue and constant straining which occur in carcinoma recti, tend to make the relation of the anus to the peritoneal pouch very different to what is met with in health.

In treating of the levator ani he describes an arrangement of fibres contrary to that met with in most text-books—namely, that a strong band passes from the back of the symphysis backwards, to be inserted into the sides of the coccyx, thus crossing the rectum nearly at right angles; to these he attributes a decided sphincter action. In this, however, Mr. Cripps' is not quite original, as a similar arrangement of these fibres is delineated by Savage ("On the Female Pelvic Organs," Third Edition, London, 1876); and he describes, under the name of pubo-coccygeus muscle, quite a similar anatomical arrangement and physiological function to that indicated by Mr. Cripps.

In discussing the function of the cylindrical epithelial cells, the author states his belief that the lymphoid cells of the retiform tissue are identical with the nuclei of the epithelial cells; and hence he considers that the principal function of these cells is the manufacture of leucocytes. He brings forward a good deal of evidence, which want of space prevents us going into here, to support this theory; and we would strongly recommend the careful study of this chapter to the physiologist.

In treating of non-malignant stricture of the rectum, Mr. Cripps considers that a condition of permanent stricture of the circular muscular fibres, attended with proliferation of the connective-tissue elements, resulting from long-continued muscular spasm, is a frequent cause; and he compares this to the well-known contraction of voluntary muscles resulting from diseased joints. On this theory as to the ætiology of stricture, we have again to call in question Mr. Cripps' originality, as a similar explanation of intestinal stricture has been put forward by Dr. Bristowe ("Obstruction of the Bowels," Reynolds' System of Medicine, Vol. III., London, 1871, p. 72). At page 283 he speaks of malignant cylindroma as apparently synonymous with cylindrical celled epithelioma—an error in nomenclature which tends to much confusion, the true cylindroma, as far as we are aware, never having been observed in the rectum. The work is well illustrated; the numerous drawings, executed by Mr. Cripps, of malignant disease of the rectum, are well reproduced and very interesting; there are also two

excellent woodcuts of multiple adenomata. We must, however, take exception to the illustrations of fistula, page 144, which he describes as diagrams, as they entirely ignore the relation of fistulæ to the levator ani muscle, or to the mucous and muscular coats of the bowel, which, obviously, is of the first importance. Although we have felt it our duty to take exception to some points, the book, as a whole, will well repay reading by surgeons interested in rectal disease.

Croonian Lectures on the Hygienic and Climatic Treatment of Chronic Pulmonary Phthisis. By HERMANN WEBER, M.D. London: Smith, Elder, & Co., 15 Waterloo-place. 1885. Pp. 124.

THE purport of these very interesting lectures is to show the importance of the further development of the treatment of phthisis by open air, by exercise, and climate; and also to advocate the establishment of numerous special hospitals and health establishments for the treatment of those consumptive invalids who are not rich. The style of these lectures is a flowing and easy one, as will be seen from the following quotation, which is a fair sample:—

"A fruitful source of phthisis is the *tendency to catarrh of the respiratory mucous membrane.* It is not to be treated by confinement to hot rooms, and by avoiding the open air; but, on the contrary, by hardening, and by accustoming the delicate person, clothed in flannel, but not loaded with clothes, to constant exposure to the air in almost all weathers—walking, driving, riding in open carriages; by abundant though judicious ventilation of the rooms; by regular sponging of the skin—at first tepid, perhaps with vinegar, afterwards cold—and by friction; by strengthening the whole system by nutritious food, and by frequent prolonged changes to the seaside or the mountains, according to the nature of the constitution. These frequently recurring catarrhal affections may form predisposing causes in different ways, especially by producing sore places in the mucous membrane, and thus allowing the bacillus to settle; or by weakening the epithelial cells of the mucous membrane and their ciliary action, or by causing imperfect breathing from unconsciously avoiding deep inspirations in order to avoid coughing, or by weakening the nutrition and energy of the whole system. The latter element is powerful, and by no means rare. Many persons remain excessively weak for a long time after a so-called 'severe cold,' and lose entirely their appetite, and their inclination to exercise and to work."

There is much valuable information on the subject of the elevated health resorts in the Alps and other mountainous regions.

PART III.

HALF-YEARLY REPORTS.

REPORT ON FORENSIC MEDICINE.

By H. C. TWEEDY, M.D., Dubl.; M.K.Q.C.P.; Diplomate in State Medicine, Trin. Coll. Dubl.; Fellow and Examiner Royal College of Surgeons; Physician to Steevens' Hospital.

1. Cremation.
2. Cadaveric Lesions of the Nervous Centres.
3. Adipocere.
4. The Blood of the Insane.
5. Insanity Alternating with Spasmodic Asthma.
6. Recent Changes in the Lunacy Laws.
7. Lord Selborne's "Lunacy Acts Amendment Bill."

I. CREMATION.

SIR SPENCER WELLS, in a lecture recently delivered on this subject, remarked that the dissolution of the body, whether by burial or by cremation, tended to the same perpetuation of life by death, the body being resolved into carbonic acid, ammonia, and water, utilised by plants for their growth. Whether the change were brought about in an hour, or in three years, under the best conditions of burial, or in twenty years, if these conditions were less favourable, the results were identical.

The objections raised against cremation may be conveniently classed under four heads—sentimental, legal, medico-legal, or religious. As to the last, the question may be said to be set at rest by the opinions which Sir Spencer Wells was able to quote from the Bishop of Manchester, Canon Liddon, and Lord Shaftesbury. When three men belonging to schools of thought so essentially dissimilar are found to agree, it may be concluded that the religious prejudice, if any exist, will shortly cease. The objections, therefore, which the advocates of cremation have to fear are of but two kinds, sentimental or forensic. Those who object on sentimental grounds, can know very little of the

working of many suburban cemeteries, where bodies are heaped in layers in a clay soil; neither can they ever for a moment have tried to realise what is going on in many country churchyards, where overcrowding is, unfortunately, but too prevalent.

Sir Spencer Wells quoted the report recently made by Dr. Quirke, Medical Officer of Health of the Piltown district. Dr. Quirke reported that, in the graveyard in the village of Ooning, the soil was water-logged, and that he had found men engaged in excavating a new grave by digging through coffins and the putrid remains of persons previously interred. A very effective contrast to such facts, and to our habit of burying the honoured dead under the floor of cathedrals and churches was, of course, easily drawn by describing the recent discovery of the ashes of an Emperor of Rome, intact and unaltered, just as they had been deposited in the cinerary urn by sorrowing relatives.

If cremation were generally adopted in England, it would be easy to make cemeteries and churchyards beautiful places of recreation.

The strongest objection against cremation is undoubtedly drawn from the probability that some poisoners would escape. Lord Bramwell thinks the objection "more than unfounded." Sir Spencer Wells urged that the precautions taken by the Society were sufficient; and Dr. Cameron, M.P., thought them unnecessarily stringent, supporting his opinion by the somewhat inconsequential argument that a very large number of people are buried in this country every year without any medical certificate or examination. Mr. Seymour Haden was equally emphatic on the other side. He urged that, owing to the statute by which experiments on animals were now forbidden, the medical men of the present generation had no experience of the symptoms produced by the various poisons; and he contended that the difficulties in the way of making a complete necropsy, which would involve a qualitative and quantitative examination of all the organs, were practically so great that they would never be surmounted. But this argument is not so valid against cremation as it seems. A medical examination of the body would, in the case of a large number of poisons—the minerals and mineral acids, at least—raise a strong suspicion that death had been compassed by foul means. Death from injury or from concealed wounds would equally be discovered. The objection, therefore, practically rests for support on those rare cases of poisoning by the alkaloids

where it is necessary to exhume the body in order to search for the poison, in consequence of suspicions arising long after death. Striking an average, it would appear more than probable that cremation, if it led to a certain number of poisoners escaping, would tend to favour the detection of murder in a far larger number of cases, unless, indeed, the habits of murderers and poisoners changed, and they grew wise enough always to resort to the rarer alkaloids; for—*pace* Mr. Seymour Haden—most members of the profession know the symptoms of poisoning by morphine or strychnine. The law as to the sale of poisons ought to be worked with sufficient stringency to make the purchase of the alkaloids, except with the fullest measure of publicity, impossible.

II. CADAVERIC LESIONS OF THE NERVOUS CENTRES.

Dr. Baillarger, in the *Annales Médico-Psychologiques*, No. 1, 1885, gives an account of some observations recently made, which tend to demonstrate that the adhesions of the membranes to the cortex cerebri, which are almost constantly found in the brains of patients who have died of general paralysis, are only produced after death, and that they ought, therefore, to be regarded as a cadaveric lesion. In five cases in which examinations were made less than ten hours after death no adhesions were found.

III. ADIPOCERE.

Dr. Stevenson draws attention to an interesting monograph on the formation of adipocere by Dr. E. Zillner, in the *Vierteljahrsschr. für Gerichtl. Med.*, Band. XLII., p. 1.

The author cites a series of cases illustrating the usual course of decomposition when a human body decomposes in running water or moist earth. The periods of time fixed are, however, necessarily subject to considerable variation. The changes in the order of their occurrence he fixes as follows:—1. Changes in the watery constituents of the dead body; imbibition into the blood and transudation—one week to one month. 2. Breaking down of the superficial integument, then of the corium, and consequent hæmorrhagic extravasation—within two months. 3. Breaking up of the muscular and glandular tissues and of the organic basis of the bones, till finally an inorganic residue alone remains, and of the fibrous and elastic tissues; mechanical removal of the products of the breaking up—three to twelve months. 4. Decomposition of the neutral fats, mechanical removal of the fluid products

(glycerin and oleic acid), crystallisation, and partial saponification of the higher fatty acids in the panniculus; transformation of the rest of the blood-pigment into crystalline pigments (especially around the blood-vessels)—four to twelve months and onwards.

IV. THE BLOOD OF THE INSANE.

The Medico-Psychological Association has awarded a prize to Dr. S. Rutherford Macphail for his "Clinical Observations on the Blood of the Insane." The essay may be found in the October and January numbers of the *Journal of Mental Science.*

After some experiments to ascertain the normal proportion of blood-corpuscles in sane individuals by means of the hæmatocytometer and hæmoglobinometer, Dr. Macphail proceeded to examine the condition of the blood in forty cases of dementia of various ages. In this form of insanity he found the percentage of hæmoglobin below the normal standard; the percentage of hæmatocytes was likewise diminished, and the blood was found deficient in hæmatoblasts or small granule cells.

In commenting on this interesting *brochure* Dr. Ireland draws attention to the experiments made by Italian physiologists in this direction. In the *Revista Sperimentale di Freniatria* (Anno X., Fasc. i., ii.) there is a summary of the observations of Dr. Seppilli on the blood of the insane; and in *La Psichiatria* (Anno II., Fasc. ii.) there is some account of the experiments of Dr. B. R. Pietro on the heart, pulse, and globulometry of the insane. Seppilli has six observations on the blood in general paralysis, Pietro nine. Their results do not differ from those of Dr. Macphail, who found the percentage of hæmoglobin and the red corpuscles diminished, and their character altered in general paralysis; and this deterioration progresses along with the march of the disease. Apparently the results obtained are what might have been expected on the assumption that insanity is a disease which depresses or exhausts the strength and vital powers of the patient. On admission and during the course of the insanity the blood was found to be deficient in hæmoglobin and in red corpuscles; on recovery the patient became richer in hæmoglobin and in hæmatocytes. Dr. Macphail, however, observed that the hæmatocytes were above the usual standard in melancholia, while the hæmoglobin was below.

The highest percentages of hæmoglobin and hæmatocytes were found in three cases of acute mania and in one of *delirium tremens.*

Seppilli found in most cases of true maniacal excitement a blood as rich in corpuscles as in the normal condition. In pellagrous insanity, a form unknown in Britain, diminution in blood corpuscles and hæmoglobin was most marked. Dr. Pietro has found hypertrophy of the heart very common with those who have died insane. Of forty-eight examinations he found hypertrophy in forty-three cases. He believes that this condition commences in the right ventricle, which he attributes to changes he has observed in the ganglia of the sympathetic. The following are the conclusions at which Dr. Macphail has arrived:—

There appears to be a close connection between gain in weight, improvement in the quality of the blood, and mental recovery. While there is a definite improvement in the condition of the blood during mental convalescence in all cases, the improvement is both more pronounced and more rapid in those who have had tonic treatment.

V. INSANITY ALTERNATING WITH SPASMODIC ASTHMA.

An interesting paper on this rare condition has been published by Dr. Connolly Norman in the April number of the *Journal of Mental Science*. The author expresses surprise at the subject having been so little touched upon by medical writers.

With the exception of a case published by Dr. Kelp in 1872 (*Zeitschrift für Psych.*, Band. XXIX., Heft. 4), another case mentioned by Dr. Lount, of Bremen, and some others in Dr. Savage's *Clinical Manual*, Dr. Norman has been unable to find any literature on the subject.

He himself recounts seven well-marked cases that have come under his own observation, explanatory of which some of his own remarks may be quoted.

"All the cases show a marked alternation of mental and pulmonary symptoms. Thus, in the first case, we have chronic asthma vanishing when insanity comes on, and reappearing when the mental trouble becomes chronic. In the second, asthma cuts short and takes the place of an attack of insanity. In the third—perhaps the most remarkable and interesting of the series—habitual asthma disappearing, its place is rapidly taken by insanity, which, again, disappears immediately on the return of the asthma. When the last change occurred, the patient was under close observation in an asylum, so that there can be no doubt as to the sequence of events. . . . In the fourth case, chronic asthma occurring in

an imbecile ceases with an acute attack of insanity, and comes on again when the latter has passed off. In the fifth the same order of things is observed as in the third. In the sixth, the chronic asthma lessens in severity and finally disappears with the oncome of insanity; when the mental defect becomes chronic with some degree of amelioration, asthma returns.

"Analysing the mental symptoms in each case, it will be observed that the first and seventh presented the character of acute melancholia, though the former has become chronic in its course. The fourth was a case of acute mania occurring in a person of originally feeble mind, and followed by an increase of feebleness. The four other cases all exhibited the characteristics of chronic degenerative mental disease rather than of acute insanity, and this is the more remarkable as they were mostly acute.

"The significance of delusions of persecution, tending to be organised, it is needless to point out; but it may be necessary to note that impulses and imperative conceptions, such as those found in the third case, are almost unknown as symptoms of an acute primary neurosis. Krafft-Ebing, who has given much attention to this subject, classes imperative conceptions among the signs of mental degeneration. They are found in persons exhausted by sexual excess, or burdened with the load of strong hereditary neurotic taint."

The cases recounted by Dr. Savage and Dr. Kelp similarly bear the impress of a chronic incurable malady, though two out of the four noted by the former observer recovered, as did the single case recorded by the latter.

VI. RECENT CHANGES IN THE LUNACY LAWS.

An Act to Amend the Law relating to Lunatics was passed on the 6th of August, 1885.

It is entitled the Lunacy Acts Amendment Act, 1885 (48 & 49 Vict., ch. 52), and provides that—

"1st. Where, under the Lunatic Asylums Act, 1853, it shall be the duty of any relieving officer, overseer, or constable to give notice to or lay information before a justice as to any pauper who is or is deemed to be a lunatic, or as to any person wandering at large who is deemed to be a lunatic, or as to any other person deemed to be a lunatic who is not under proper care or control, or is cruelly treated or neglected by any relative or other person having the care or charge of him, or to apprehend and take any such person wandering at large before a justice,

and the relieving officer, overseer, or constable is satisfied that it is necessary for the public safety, or the welfare of the alleged lunatic, that before such notice or information can be given or laid, or the alleged lunatic can be brought before the justice, the alleged lunatic should be placed under care and control, the relieving officer, overseer, or constable may remove the alleged lunatic to the workhouse of the union in which the alleged lunatic is, and the master of the workhouse shall, unless there is no proper accommodation in the workhouse for the alleged lunatic, receive and relieve and detain him therein, but no person shall be so detained for more than three days; and before the expiration of that time the relieving officer, overseer, or constable shall give the notice to or lay the information before the justice as to such alleged lunatic, or bring him before the justice, as the said Act requires.

"2nd.—(1.) In any case where, under section sixty-seven or section sixty-eight of the Lunatic Asylums Act, 1853, an order might be made for the removal of a lunatic to an asylum, hospital, or licensed house, and the justice or justices shall be satisfied that it is expedient for the welfare of the lunatic or for the public safety that the lunatic should be forthwith placed under care and control, such justice or justices, if it shall appear to him or them that there is proper accommodation for such lunatic in the workhouse of the union in which the lunatic is, may make an order for taking the lunatic to and receiving him in the said workhouse.

"(2.) An order under this section shall be deemed to authorise the detention of the lunatic for a period not exceeding fourteen days from its date; after which such detention shall not be lawful, except under the conditions mentioned in section twenty of the Lunacy Acts Amendment Act, 1862.

"(3.) In any case where the justice or justices make an order for the removal of the lunatic to an asylum, hospital, or licensed house, an order under this section may also be made to provide for the detention of the lunatic until he can be removed as aforesaid; but such an order shall not be deemed to authorise the detention of the lunatic in the workhouse for more than fourteen days.

"(4.) An order under this section may be made by any justice or justices of the peace having jurisdiction in the place where the lunatic is.

"3rd. This Act shall be construed as one with the Lunatic Asylums Act, 1853, and the Acts amending that Act, and expressions used in this Act shall according to the subject-matter in each case have the same meaning as in those Acts, save as in this Act otherwise provided.

"In this Act 'Union' includes a parish for which there is a separate board of guardians."

VII. LORD SELBORNE'S "LUNACY ACTS AMENDMENT BILL."

A Bill was introduced by Lord Selborne on the 26th March last to Amend the Existing Lunacy Code.

The following were its principal provisions:—

"1. The order must not be signed by a relation.

2. Before an order can be obtained, a petition for it must be signed by a relation.

3. A justice of the peace must examine an alleged lunatic, accompanied by a statement of particulars.

4. The usual medical attendant of the lunatic must sign one of the medical certificates.

5. The medical certificates are to be written on separate pieces of paper.

6. The examination of the patient is to be secret, but the urgency order is to be signed by a relation.

7. The officiating clergyman may no longer sign an order for a pauper lunatic.

8. A justice alone may sign an order for the admission of a wandering lunatic to a workhouse.

9. A medical officer of a workhouse may alone sign a certificate by which a pauper lunatic can be detained fourteen days. For any longer period, both the justice and the medical man must sign.

10. A report of mental and bodily condition of private patients must be sent to the Commissioners at the end of one calendar month after reception. (Not after two and within seven days as before).

11. Orders expire yearly unless the medical officer makes a special report to the Commissioners that renewal of order is necessary.

12. Infant imbeciles may be received into an asylum upon one medical certificate.

13. A statement as to mental and bodily condition is to be made fourteen days after the reception of the patient.

14. A lunatic's property may be managed for him without his being necessarily detained in custody.

15. Licensed houses are not to receive pauper lunatics five years after the commencement of this Act.

16. Power is given to justices to enlarge asylums, in order to provide accommodation for private patients.

17. Power is given to justices to provide asylums for private patients."

The Bill, introduced on March 26th, was read a second time on April 27th. Between this date and May 19th, when it was down

for Committee, Lord Selborne prepared no less than 13 pages of amendments.

These chiefly concerned the appointment of special justices to sign the orders in lunacy cases; the permission of consultation between the medical men certifying; the insertion of a new clause legalising the immediate removal to workhouses, and without certificate, in certain sudden and dangerous cases of insanity; the insertion of a sub-section affording some protection to medical men who sign certificates of insanity in good faith; and of one to the effect that no prosecution for misdemeanour, under s. 16 of the amended Bill, should take place except by the direction of the Attorney-General, or of the Public Prosecutor; and the omission of the proviso that boarders must not be of unsound mind. With the object of giving time for the consideration of these amendments, the Bill was accordingly ordered to be reprinted, in order that it might be discussed in detail after the Whitsuntide recess. But the defeat of the Government upset all calculations, and the Bill shared the fate of many others in becoming a dropped order so far as the present Parliament is concerned, a resolution for its discharge being passed on the 9th of July. As one consequence of this, Lord Shaftesbury, who had resigned the position which he had held for half a century as Chairman of the Lunacy Commission, in view of his "invincible repugnance" to the introduction of a magistrate into the process of placing a patient under care and treatment in an hospital or licensed house, afterwards resumed that office, reserving to himself complete liberty of action as to future legislation. The general result, however, is that considerable progress has been made in shaping and amending the proposed new legislation, and in bringing to bear upon it the matured results of medical experiences.

PILOCARPIN IN ALCOHOLISM.

Dr. Isham, of Cincinnati, has found pilocarpin exceedingly useful in producing sleep in cases of acute alcoholism, and, at the same time, in inducing rapid excretion of the poison without any of the bad effects of the narcotic drugs usually resorted to in this condition. The *sobering* properties of pilocarpin, he says, are remarkable. After the sleep the patient arouses perfectly rational and subdued. He gives one-third of a grain of the hydrochlorate of pilocarpin hypodermically.—*N. Y. Med. News*, September 19.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

CLINICAL RECORDS.

Acute Dissecting Aneurysm of the Aorta. By JAMES CARNEGIE MACMULLEN, L.K.Q.C.P., L.R.C.S.I., Coromandel, New Zealand.

THE following is an account of a *post-mortem*, which was made by Dr. Charles Henry Haines and myself, in Auckland, on Wednesday, August 8th, 1883:—

I can give no previous history of the case, as Dr. Haines saw it for the first time the night before the woman died, and she had not had medical advice before that at all. The woman's friends said that she had been subject to bronchitis, but otherwise very healthy.

Dr. Haines was sent for at 8 30 on Tuesday evening, August 7th, 1883, and found the woman sitting in a chair, and somewhat recovered from a severe attack of sudden pain between the shoulders, which had come on about half an hour before he was called; she had no dyspnœa. The heart sounds were normal, with a slight increase in the area of cardiac dulness; the pulse was strong and full; there was nothing apparently the matter with her, excepting the acute pain between the shoulders.

She had hot fomentations to the back, after which she was greatly relieved and went to bed; she spent a fairly quiet night, and about 8 a.m. next morning sent the girl who was with her down to get some breakfast; the girl came back in about fifteen minutes and found her lying on her left side, very pale and evidently dying. Dr. Haines was sent for and reached the house at 8.30, when he found her dead, exactly twelve hours having elapsed from the time the acute pain came on between the shoulders until she died. We made a *post mortem* the same afternoon, and found the following conditions:—There was a considerable amount of clear serum in the pericardium, which was adherent on both sides to the pleuræ; the heart was covered with fat and slightly hypertrophied, its muscle being a good colour and all the valves healthy, no atheroma anywhere. The lungs were apparently healthy, but we did not cut them open. There were over two pints of blood in the left pleural cavity, partly large clots and partly fluid; we at once suspected aneurysm

and looked for it. At the descending portion of the arch of the aorta there was a rent about three-quarters of an inch long, running obliquely across the convexity of the arch, the coats at this point were extremely thin, but the aneurysmal dilatation was very slight. The internal and middle coats had evidently given way first, as there was a dissecting aneurysm running down the aorta, for about seven inches, from the seat of rupture; there was a rupture in the outer coat not quite corresponding but nearly opposite to that in the internal and middle, through which the blood had poured into the pleural cavity. The right pleura was quite empty. The abdominal viscera were healthy, with the exception of the left ovary, which was enlarged, and on section apparently scirrhous. The uterus was atrophied, the woman being sixty-five years of age.

What appears to be the chief point of interest in the case is the time which elapsed between the rupture of the internal and middle coats and her death, just twelve hours. For I take it that the sudden acute pain between the shoulders marked the time of the first rupture, that the dissecting aneurysm was then slowly formed, that the outer coat was sufficiently strong to bear the strain for a time, but ultimately also gave way nearly opposite the first rent, killing her almost at once by the tremendous hæmorrhage into the pleural cavity.

There could have been but little to lead one to suspect aneurysm during life, as there was only slight dilatation of the third portion of the aortic arch, certainly not sufficient to give rise to the characteristic symptoms of thoracic aneurysm; and with the exception of the bronchitis of which her friends spoke, the woman enjoyed excellent health. Besides being extremely thin, the aorta was very easily torn at the seat of rupture. The woman had always been very temperate and hard-working.

FŒTID PERSPIRATION.

In fœtid perspiration of the feet, Vieusse recommends the application, with slight friction, of the subnitrate of bismuth.—*N. Y. Med. News*, Sept. 19, 1885.

SUBCUTANEOUS INJECTION OF QUININE.

Dr. Lanchlan Aitken, of Rome, states that the following method, which he has lately adopted in those cases in which there is occasional necessity for the injection of quinine subcutaneously, has given decidedly better results than any previously tried:—Five grains of the bisulphate are dissolved in a mixture of thirty minims of equal parts of the purest glycerin and distilled water at a temperature of 98° Fahr.; and to this solution two per cent. of pure carbolic acid is added. This quantity—thirty minims—or less, may be used for one injection, and no local or general injurious results have followed numerous injections of the maximal quantity stated.—*British Med. Jour.*, Oct. 10.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, M.D., F.K.Q.C.P., F. R. Met. Soc.

Vital Statistics

Of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, September 12, 1885.

Towns	Population in 1885	Births Registered	Deaths Registered			Deaths from Seven Zymotic Diseases							Deaths from Phthisis	Death-rate per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		From all causes	From seven Zymotics
Dublin,	353,082	773	655	165	147	–	–	8	1	9	15	46	81	24·7	2·9
Belfast,	219,222	528	385	86	42	–	7	7	4	17	9	41	70	22·9	5·1
Cork,	80,124	158	115	17	22	–	–	3	–	2	1	1	18	18·7	1·1
Limerick,	38,562	68	57	10	16	–	–	–	–	2	1	2	11	19·2	1·7
Derry,	29,162	53	46	8	9	–	–	–	2	–	2	3	6	20·5	3·1
Waterford,	22,457	56	38	8	10	–	–	1	–	–	–	3	3	22·0	1·7
Galway,	15,471	28	18	1	4	–	–	–	–	–	–	–	4	15·1	–
Newry,	14,808	30	21	1	8	–	–	–	–	1	–	–	4	18·6	0·9

Remarks.

In the eight selected towns included in the foregoing Table the highest death-rates are 24·7 per 1,000 of the population annually in Dublin, 22·9 in Belfast, 22·0 in Waterford, and 20·5 in Londonderry; the lowest rates are 15·1 in Galway, 18·6 in Newry, 18·7 in Cork, and 19·2 in Limerick. The rate of mortality from seven chief zymotics ranged from 5·1 per 1,000 per annum in Belfast, 3·1 in Londonderry, 2·9 in Dublin, 1·7 in Limerick and Waterford, 1·1 in Cork, and 0·9 in Newry to *nil* in Galway.

The recorded deaths represent a rate per 1,000 of the population annually of 18·4 in twenty-eight large English towns (including London, in which the rate was 16·9), 21·4 in the sixteen chief towns of Ireland, 22·5 in Glasgow, and 15·6 in Edinburgh. There is a marked decrease (from 20·7 to 18·4) in the mortality in the English towns generally;

in London it has fallen even more perceptibly, namely, from 21·0 to 16·9 per 1,000 per annum. The mortality fell steadily week by week in the metropolis, the weekly rates being 18·8, 17·5, 15·8 and 15·6. This last named value is unprecedented in London. The death rate fell also in Glasgow (from 23·9 to 22·5). In Edinburgh it fell slightly (from 15·9 to 15·6). In the Irish towns the rate of mortality has once more fallen, but very slightly, from 21·8 to 21·4. If the deaths (numbering 19) of persons admitted into public institutions from localities outside the Dublin Registration District are deducted, the death-rate of that district becomes 23·5, while that of the portion of the district included within the municipal boundary is 26·6 per 1,000 per annum. In London the epidemic of smallpox happily shows a continuous decrease—the deaths were only 29, compared with 63, 105, 193, 239, 179, 109, 197, and 229 in the eight preceding periods of four weeks each. The weekly number of deaths from this disease since the beginning of the year have been 56, 42, 70, 58, 59, 60, 56, 44, 37, 27, 35, 23, 24, 39, 40, 49, 51, 48, 66, 75, 50, 55 62, 39, 37, 28, 39, 23, 15, 18, 16, 14, 15, 5, 9, 6, and 9 respectively. The deaths from diarrhœal diseases in the same city, which numbered 54, 51 52, 78, 415, and 1,163 in the six preceding periods of four weeks each, were only 429.

Acute febrile zymotics were returned as the cause of death in 89 instances in the Dublin district, compared with a ten-years' average of 138·7 in the corresponding period and 75 in the previous four weeks. The 89 deaths included 8 from scarlet fever, 15 from "fever," 9 from whooping-cough, 46 from diarrhœal diseases, and one from diphtheria. There was no death from smallpox, or from measles. The epidemic of scarlet fever again shows a marked decline, the deaths being 4 fewer than in the previous four weeks. Of the 15 deaths referred to "fever," 5 were ascribed to typhus, and 8 to enteric fever, while in 2 instances the exact nature of the fever was either not specified or was ill-defined. The deaths from fever were equal in number to those registered (15) in the previous four weeks. Three children aged between one and five years succumbed to scarlet fever, and one victim to this disease was under one year old. The deaths from whooping-cough rose from 4 in the previous four weeks to 9. Of the 9 victims of whooping-cough 6 were between one and five years of age, and 3 were infants of less than twelve months old.

The fatal epidemic of cerebro-spinal fever recently noticed in some of the southern suburbs of Dublin has apparently died out. No deaths were referred to this disease, against 6, 10 and 18 in the three previous periods of four weeks each.

Measles caused but 7 deaths in Belfast, compared with 38, 88 and 162 in the three preceding periods; and in Dublin not a single death was attributed to this disease for the first time in the records of 1885. Since

the beginning of the year the weekly numbers of deaths from measles in Dublin have been 3, 3, 5, 3, 5, 10, 11, 8, 10, 11, 16, 12, 13, 19, 15, 15, 17, 12, 14, 17, 13, 9, 11, 6, 7, 3, 4, 3, 3, 3, 2, and 4 respectively—287 deaths in all.

Scarlet fever was fatal in 7 instances in Belfast, in 3 cases in Cork, and in one case in Waterford. Diarrhœal diseases were credited with 96 deaths in the eight towns, compared with 68, 30, 32, 27, and 18 in the five previous periods of four weeks. In London the weekly registered deaths from diarrhœal diseases were 163, 121, 83, and 62 respectively.

In the Dublin Registration District 773 births and 655 deaths were registered, compared with 730 births and 579 deaths in the previous four weeks. The births were those of 360 boys and 413 girls. The deaths of infants under one year were 165 against 105 in the previous four weeks; those of persons aged 60 years and upwards were 147, compared with 146 in the previous period.

The deaths referred to pulmonary consumption in the eight towns were 197, compared with 209, 213, 243, 277, 252, 270, 244, and 239 in the eight preceding periods of four weeks each. In Dublin diseases of the respiratory organs are stated to have caused 98 deaths, against an average of 76·6 in the corresponding four weeks of the previous ten years, and compared with 65, 117, 120, 177, 207, 246, 225, and 213 in the eight preceding periods of four weeks each. The 98 deaths included 58 from bronchitis (average = 47·8) and 25 from pneumonia (average = 14·4). Of the 58 persons who succumbed to bronchitis, 13 were infants under twelve months, whereas 16 had passed their sixtieth year. The increased prevalence and fatality of diseases of the respiratory organs depended on the change in the weather, which became cold and wet towards the end of August.

On Saturday, September 12, 1885, there were under treatment in the principal Dublin hospitals one case of smallpox, 2 of measles, 28 of scarlet fever, 20 of typhus, 27 of enteric fever, and 5 of pneumonia.

The mean temperature of the four weeks was 56·5° in Dublin, 56·0° in Belfast, 58·6° at Roche's Point, Co. Cork, 54·4° at Edinburgh, and 57·3° at Greenwich. The minimal readings of the thermometer in the screen were 42·9° in Dublin, 39° at Belfast, 48° at Cork, 36·0° at Edinburgh, and 43·2° at Greenwich. The maximal temperatures were 71·4° in Dublin, 68° at Belfast, 70° at Cork, 71·0° at Edinburgh, and 80·2° at Greenwich. The returns from Glasgow for the last week of the period are wanting.

At first fine, but at night-time cold, the weather became very changeable, cool, and cloudy after the 22nd of August. And the portion of the period included in September was stormy, wet, and cold. Hence there was an early change in the type of disease from æstival and autumnal to hibernal.

Vital Statistics

Of the Eight Largest Towns in Ireland, for four Weeks ending Saturday, October 10, 1885.

Towns	Population in 188	Births Registered	Deaths Registered			Deaths from Seven Zymotic Diseases							Deaths from Phthisis	Death-rate per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		From all causes	From seven Zymotics
Dublin,	353,082	782	590	133	139	–	4	13	1	7	14	24	71	21·8	2·3
Belfast,	219,222	533	373	80	53	–	6	11	2	13	8	23	51	22·2	3·8
Cork,	80,124	154	129	22	27	–	–	8	–	4	2	4	18	20·9	2·9
Limerick,	38,562	86	55	10	20	–	–	–	–	1	2	1	8	18·6	1·3
Derry,	29,162	72	52	11	13	–	–	–	–	1	–	2	2	23·2	1·4
Waterford,	22,457	50	32	7	7	–	–	–	–	–	–	2	6	18·5	1·2
Galway,	15,471	29	24	5	11	–	–	–	–	–	–	–	–	20·2	—
Newry,	14,808	22	14	2	2	–	–	–	–	–	–	–	–	12·3	—

Remarks.

In the eight selected towns included in the foregoing Table the highest death-rates are 23·2 per 1,000 of the population annually in Londonderry, 22·2 in Belfast, 21·8 in Dublin, and 20·9 in Cork; the lowest rates are 12·3 Newry, 18·5 in Waterford, 18·6 in Limerick, and 20·2 in Galway. The rate of mortality from seven chief zymotics ranged from 3·8 per 1,000 per annum in Belfast, 2·9 in Cork, 2·3 in Dublin, 1·4 in Londonderry, 1·3 in Limerick, and 1·2 in Waterford, to *nil* in Galway and Newry.

The recorded deaths represent a rate per 1,000 of the population annually of 17·1 in twenty-eight large English towns (including London, in which the rate was 15·6), 21·0 in the sixteen chief towns of Ireland, 19·1 in Glasgow, and 14·7 in Edinburgh. There is again a marked decrease (from 18·4 to 17·4) in the mortality in the English towns generally; in London it has fallen proportionally, namely, from 16·9 to 15·6 per 1,000 per annum. The mortality fell to 13·8 in the metropolis in the second week, and then rose to 16·0 and 16·7 in the third and fourth weeks respectively. The death-rate of 13·8 per 1,000 per annum is unprecedented in London. The death-rate fell decidedly in Glasgow (from 22·5 to 19·1). In Edinburgh it fell also (from 15·6 to 14·7). In the Irish towns the rate of mortality has once more fallen, but again very slightly, from 21·4 to 21·0. If the deaths (numbering 17) of

persons admitted into public institutions from localities outside the Dublin Registration District are deducted, the death-rate of that district becomes 21·5, while that of the portion of the district included within the municipal boundary is 24·3 per 1,000 per annum. In London the mortality from smallpox appears to be at a standstill—the deaths were 29, compared with 29, 63, 105, 193, 239, 179, 109, 197, and 229 in the nine preceding periods of four weeks each. The weekly number of deaths from this disease since the beginning of the year have been 56, 42, 70, 58, 59, 60, 56, 44, 37, 27, 35, 23, 24, 39, 40, 49, 51, 48, 66, 75, 50, 55, 62, 39, 37, 28, 39, 13, 15, 18, 16, 14, 15, 5, 9, 6, 9, 8, 11, 7, and 3 respectively. The deaths from diarrhœal diseases in the same city, which numbered 54, 51, 52, 78, 415, 1,163, and 429 in the seven preceding periods of four weeks each, were only 166.

Acute febrile zymotics were returned as the cause of death in 74 instances in the Dublin district, compared with a ten-years' average of 137·6 in the corresponding period and 89 in the previous four weeks. The 74 deaths included 4 from measles, 13 from scarlet fever, 14 from "fever," 7 from whooping-cough, 24 from diarrhœal diseases, and one from diphtheria. There was no death from smallpox. The fatality of scarlet fever shows an increase, the deaths being 5 more than in the previous four weeks. Of the 14 deaths referred to "fever," one only was ascribed to typhus, while 9 were attributed to enteric fever, and in 4 instances the exact nature of the fever was either not specified or was ill defined. The deaths from fever were one fewer than those registered (15) in the previous four weeks. Nine children aged between one and five years succumbed to scarlet fever, and one victim to this disease was under one year old. The deaths from whooping-cough fell from 9 in the previous four weeks to 7. Of the 7 victims of this disease, 3 were between one and five years of age, and 4 were infants of less than twelve months old. The four victims of measles were all children aged between 1 and 5 years. A death from cerebro-spinal fever was registered in the week ending September 26, in the Coolock and Drumcondra district.

Measles caused but six deaths in Belfast, compared with 7, 38, 88, and 162 in the four preceding periods.

Scarlet fever was fatal in 11 instances in Belfast, and in 8 cases in Cork. Diarrhœal diseases were credited with 56 deaths in the eight towns, compared with 96, 68, 30, 32, 27, and 18 in the six previous periods of four weeks. In London the weekly registered deaths from diarrhœal diseases were 40, 49, 42, and 35 respectively.

In the Dublin Registration District 782 births and 590 deaths were registered, compared with 773 births and 655 deaths in the previous four weeks. The births were those of 407 boys and 375 girls. The deaths of infants under one year were 133 against 165 in the previous

four weeks; those of persons aged 60 years and upwards were 139, compared with 147 in the previous period.

The deaths referred to pulmonary consumption in the eight towns were 156, compared with 197, 209, 213, 243, 277, 252, 270, 244, and 239 in the nine preceding periods of four weeks each. In Dublin diseases of the respiratory organs are stated to have caused 96 deaths, against an average of 87·7 in the corresponding four weeks of the previous ten years, and compared with 98, 65, 117, 120, 177, 207, 246, 225, and 213 in the nine preceding periods of four weeks each. The 96 deaths included 65 from bronchitis (average = 59·2) and 18 from pneumonia (average = 13·5). Of the 65 persons who succumbed to bronchitis, 9 were infants under twelve months, whereas no fewer than 28 had passed their sixtieth year. The continued prevalence and fatality of diseases of the respiratory organs depended on the cold, broken weather, which has so far characterised the present season.

On Saturday, October 10, 1885, there were under treatment in the principal Dublin hospitals no cases of smallpox or of measles, 28 of scarlet fever, 26 of typhus, 27 of enteric fever, and 5 of pneumonia.

The mean temperature of the four weeks was 49·8° in Dublin, 49·9° at Belfast, 52·7° at Roche's Point, Co. Cork, 49·7 at Edinburgh, and 51·9° at Greenwich. The minimal readings of the thermometer in the screen were 34·4° in Dublin, 37° at Belfast, 34° at Cork, 31·4° at Edinburgh, and 30·6° at Greenwich. The maximal temperatures were 66·8° in Dublin, 63° at Belfast, 63° at Cork, 66·0° at Edinburgh, and 76.4° at Greenwich. The returns from Glasgow for the last week of the period are wanting.

It will be noticed that the mean temperature was considerably below the average at all stations. The rainfall also was excessive, and the wind blew freshly or strongly throughout the period. The exceptionally low rate of mortality so generally observed depended on these meteorological factors—the weather being sufficiently cold and rainy to check summer maladies, but not so cold as to cause a high death-rate from diseases of the respiratory organs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of September, 1885.

Mean Height of Barometer, - - -	29·816 inches.
Maximal Height of Barometer (on 21st at 9 p.m.) -	30·272 „
Minimal Height of Barometer (on 30th, at 9 a.m.),	29·150 „
Mean Dry-bulb Temperature, - - -	53·3°.
Mean Wet-bulb Temperature, - - -	50·6°.
Mean Dew-point Temperature, - - -	48·0°.

Mean Elastic Force (Tension) of Aqueous Vapour, -	·340 inch.
Mean Humidity, - - - - -	82·8 per cent.
Highest Temperature in Shade (on 12th), - -	68·9°.
Lowest Temperature in Shade (on 27th), - -	34·4°.
Lowest Temperature on Grass (Radiation) (on 27th),	27·9°.
Mean Amount of Cloud, - - - -	49·2 per cent.
Rainfall (on 23 days), - - - -	2·862 inches.
Greatest Daily Rainfall (on 2nd), - - -	·364 inch.
General Directions of Wind, - - -	W., S.W., N.W.

Remarks.

The weather was very unsettled, rainy and cool during the greater part of this month. The "Atlantic Depression" between the British Isles and Iceland was well developed, and the distribution of atmospherical pressure was generally cyclonic, with prevailing winds from westerly points (S.S.W. to N.W.).

The mean height of the barometer was 29·816 inches, or 0·101 inch below the average value for September—namely, 29·917 inches. The mercury rose to 30·272 inches at 9 p.m. of the 21st, and sank to 29·150 inches at 9 a.m. of the 30th. The observed range of atmospherical pressure was, therefore, 1·122 inches—slightly more than an inch and one-tenth. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 53·3°, or 3·3° below the value for August, 1885; that calculated by Kaemtz's formula from the means of the daily maxima and minima was 53·2°, or 1·9° below the average mean temperature for September, calculated in the same way, in the twenty years, 1865–84, inclusive (55·1°). The arithmetical mean of the maximal and minimal readings was 54·4°. On the 12th the thermometers in the screen rose to 68·9°—wind S.W.; on the 27th they fell to 34·4°—wind N.W. The minimum on the grass was 27·9° on the 27th. The past month was decidedly cold, but not so cold as September in 1866 (M. T. = 51·9°), 1873 (M. T. = 53·0°), 1877 (M. T. = 52·4°), and 1882 (M. T. = 52·0°). The rainfall was 2·862 inches, distributed over as many as 23 days. The average rainfall for September in the twenty years, 1865–84, inclusive, was 2·289 inches, and the average number of rainy days was 14·5. The rainfall, therefore, was somewhat above, while the rainy days were very much above the average.

There was hail on the 10th, 25th, and 30th. Lightning was seen on the 2nd, 4th, 26th, 27th, and 30th. An aurora borealis appeared on the 4th. Solar halos were visible on the 11th and 22nd. The atmosphere was foggy on the 14th and 17th.

From the 1st to the 5th a series of atmospherical depressions, with attendant subsidiaries, travelled northeastwards along the western coasts

of Ireland and Scotland, and heavy showers, with thunder in many places, were reported. At 11 p.m. of Friday, the 4th, an aurora borealis was seen.

Cyclonic conditions persisted throughout the week ending Saturday, the 12th, and the weather was accordingly broken, squally, and showery, with low temperatures and variable winds. At 1 30 p.m. of the 10th a sharp shower of rain and hail fell in Dublin. Later in the day a sheet of cirro-stratus cloud overspread the sky, and the wind fell light, afterwards freshening from N.W. These changes depended on the formation of a deep cyclonic system near Cornwall, which travelled quickly up the English Channel during the night. The disturbance was attended by gales—at first from S. and afterwards from N., and a deluge of rain fell over the S. and E. of England—the rainfall ranging from one to three inches in these districts (at Taunton the measurement was 3·05 inches). At this time fine, bright weather was experienced in Ireland.

In the third week (13th–19th), the type of weather was again chiefly cyclonic, and in consequence unsettled. Until Wednesday, the 16th, fresh or squally S. to W. winds prevailed, and rain fell frequently in Ireland and Scotland. In England the weather was finer and warmer—the thermometer rising on the 15th to 76° in London and 78° at Cambridge. On Wednesday night shallow thunderstorm depressions caused torrents of rain in the S. and S.E. of England, with local thunderstorms. Thursday, the 17th, was quiet and fine in Dublin, but heavy showers fell along the coast of Wicklow. There was a fine "after-glow" on the evening of the 19th, when a storm centre was travelling from the N. of Scotland towards Norway.

Although temperature was low after Sunday, the 20th, and singularly low towards the close of the period, yet the weather of the week ending Saturday, the 26th, was finer and drier than it had been for some time. Heavy rains gave place to passing and local showers, while the amount of bright sunshine greatly increased. The barometer was low in Scandinavia and over the North Sea, high over France until the 24th, when an anticyclone showed itself off the W. and S.W. of Ireland. The result of these changes was to determine a northerly current in the N.W. and W. of Europe, accompanied by a spell of very winterly weather—frosty nights and showery days. Falls of cold rain and hail—and, in Great Britain, sleet and snow—occurred, and thunder and lightning were reported from many places. On the evening of the 26th very heavy thunder and hail showers fell along the coast S.E. of Dublin, while the Phœnix Park escaped with a light shower of rain. Sharp frosts prevailed at inland stations on the nights of the 25th, 26th, and 27th.

On Monday, the 28th, the weather underwent a decided change—the northerly winds died down, and a warmer S.W. current set in, with rain and squalls. On the night of the 29th the barometer fell fast, as a storm

centre of great magnitude rapidly approached the W. of Scotland from the Atlantic. By 8 a.m. of Wednesday, the 30th, the barometer was down to 28·76 inches at Stornoway, in the Hebrides, and southwesterly gales were blowing in most parts of the kingdom. During the day there were heavy squalls of rain and hail, and after dark sheet lightning played along the horizon.

PERISCOPE.

THE INFECTIVENESS OF PNEUMONIA.

In an interesting *précis* in the *Medical Chronicle* (Vol. I., p. 168, *et seq.*), Dr. John Priestley maintains that the doctrine of the infectiveness of pneumonia rests on other and more general grounds than that of observed instances of propagation from the sick to the healthy. In the first place, cropous pneumonia gives rise to a specific anatomical product, unlike the product of simple inflammation, and as characteristic in its own way as the swollen intestinal follicles in enteric fever; and this specific pathological material appears to harbour a minute organism, which may turn out to be equally characteristic of the disease. In the second place there is the more or less exact typical course of each case, which, together with the fact that the severity of the fever does not correspond with the severity of the local lesion, strongly suggests a *contagium vivum* rather than a simple inflammation. A third general consideration supporting the infectiveness of pneumonia is that of the prevalence curve. The maximum and minimum of prevalence fall year after year approximately in the same months for the same locality, as is the case also with typhoid, scarlet fever, and other infectious diseases. Jürgensen laid much stress on the fact that the curve indicating the prevalence of pneumonia in successive years agrees tolerably closely with the similar curve for typhoid fever. This he looked upon as one proof of the infective nature of pneumonia. A further study of the curve shows that the monthly prevalence of pneumonia in certain localities corresponds very closely with that of the catarrhal and chest affections commonly attributed to "catching cold." The parallelism, strangely enough, is denied by Jürgensen, whose argument demanded that pneumonia should be separated altogether from the group of "colds;" but it is beautifully shown in one of his own tables. What light does the parallel prevalence of pneumonia and catarrhs, etc., throw on the causation of pneumonia? Assuming pneumonia to be due to infective organisms in the system, we may safely conclude that the lungs give them entrance, but only when the surface of the air passages is excoriated or otherwise injured. The danger resembles that of the abraded skin in erysipelas. It is clear that the epithelial denuda-

tion of bronchitis, for example, or the rupture of congested capillaries in coughing, would afford a suitable opportunity for the inroad of micro-organisms. In addition to such pathological abrasions, the effect of a blow or crush to the chest-wall may also be enough to start a true croupous pneumonia (contusion-pneumonia). Jürgensen, it is true, contended that mechanical causes of inflammation are as little able to excite a true croupous pneumonia as a true enteric fever. But the observations of Litten[a] have upset this dogma in its literal sense. Out of 320 cases of pneumonia observed by him, no less than 4·4 per cent. of typical croupous cases were directly consequent upon some surgical injury to the chest-walls. We need not assume here the direct causal connection which Jürgensen so strenuously sought to escape, if it be granted that the injury to the chest-wall makes some breach of surface in the lung into which the air may play, the cases are as readily explained on the infective hypothesis as on any other.

EXTEMPORANEOUS EXAMINATION OF THE MILK OF WET NURSES.

A READY method of ascertaining the character of human milk has not yet been found, unless an exception be made in favour of that of Dr. Paul Hélot, which we find published in the *Journal d'Accouchements* of August 15. Hélot's method is based upon the proportion between an equal volume of distilled water and of milk; this proportion is 30 to 35, or more simply 6 to 7—that is, six drops of distilled water are equal to seven of milk. A milk having thirty-seven, or even forty, gave a good result, but if it fell below thirty-three drops it possessed neither clinically nor physically the requisite qualities. The milk is taken from the breast by a Pravaz syringe, the needle being removed, and the extremity carefully wiped; the milk should be taken about the middle of nursing, and that from each breast should be examined. The syringe is held vertically, the piston pushed slowly and gently down so that the milk escapes drop by drop, and the drops counted. Then an equal bulk of distilled water may be introduced into the syringe, and the drops counted, or this may be previously known, and a comparison made so as to learn whether the milk has its normal number of drops.—*Medical News*, Sept. 12, 1885.

HYSTERECTOMY BY THE VAGINA.

AT the meeting of the Société de Chirurgie for June 24, M. Tillaux and M. Ferrier each reported a case of vaginal operation for the removal of the uterus for epithelioma. Both cases completely recovered from the operation.—*Philadelphia Med. Times*, August 8, 1885.

[a] "Ueber die durch Contusion erzeugten Erkrankungen der Brustorgane mit besonderer Berücksichtigung der Contusions-Pneumonie."—*Zeitsch. f. klin. Med.*, Vol. V. 1882.

ALCOHOLIC DYSPEPSIA.

RESORCIN, in seven-grain doses, *ter in die*, has proved, in Dr. Isham's hands a specific in cases of drinkers' dyspepsia.—*N. Y. Med. News*, Sept. 19, 1885.

TREATMENT OF TUBERCULOSIS.

POTAIN recommends the annexed prescription as a remedy in tuberculosis:—℞. Sodii chloridi, ʒijss.; sodii bromidi, gr. 75; potassii iodidi, gr. 15; aquæ dest., fʒiij.—M. S. Dessertspoonful every morning in a cup of milk.—*Revue de Thérapeutique*, July 15, 1885, and *Medical News*, August 15, 1885.

PROLONGATION OF COCAIN ANÆSTHESIA.

FROM some experimental studies detailed by Dr. J. L. Corning in the *N. Y. Med. Jour.* of September 19, that observer asserts that simple arrest of the circulation in a part, shortly after cocain may have been subcutaneously injected into it, is sufficient to prolong and intensify the anæsthesia. In this particular experiment the circulation was arrested in a limb by means of an Esmarch's tourniquet. Other modes of experiment are also described. The advantages of this method, if its efficacy should be corroborated by other observers, is obvious.

THE PATHOGENY OF PARALYTIC AFFECTIONS IN THE OLD.

DR. RAYMOND contributes an instructive paper to the September number of the *Revue de Médecine*, "Upon the pathogeny of certain paralytic attacks observed in old people, and their probable connection with uræmia." He reports seven interesting clinical cases and the details of some experiments he has made, and from the facts, he draws the following conclusions:—1. In old people, fatal apoplectic attacks, or rather attacks followed by hemiplegia, may occur, which resemble in all their characters hemiplegia consequent upon cerebral softening or cerebral hæmorrhage. 2. These phenomena depend upon a uræmic condition. 3. Sometimes at the autopsy, the existence of an old lesion may be detected, and sometimes a simple generalised œdema of the brain. 4. The pathogeny of these cases ought, it seems, to be attributed to cerebral œdema and to the circulatory disturbances resulting therefrom. These disturbances, which may be either congestive or anæmic, depend, according to the latest analysis, upon a diminished quantity of oxygen in the cerebral blood circulation. 5. It is then absolutely of consequence, both in making a diagnosis, in the prognosis, and in settling a line of treatment, to take these clinical and pathological facts into consideration in order to avoid serious errors. 6. Many cases of sudden death in old people are thus explained in an important medico-legal point. 7. The

coincidence in the same patient of an old hemiplegia and of a chronic renal lesion, with a uræmic tendency, may be the point of departure of convulsive disturbances, especially limited to the paralysed side. 8. Those cases of hemiplegia reported by numerous authors, which are inexplicable by the results of the autopsy, may perhaps be included in the same category as those to which the author has drawn attention.

NEPHRECTOMY, ITS INDICATIONS AND CONTRAINDICATIONS.

Dr. Samuel W. Gross, in an elaborate paper in the *American Journal of the Medical Sciences*, based upon a study of nearly four hundred and fifty cases of different operations on the kidney, presents a careful analysis of all the facts pertaining to the surgery of this organ, and arrives at the following conclusions:—1. That lumbar nephrectomy is a safer operation than abdominal nephrectomy. 2. That primary extirpation of the kidney is indicated—first, in sarcoma of adult subjects; secondly, in benign neoplasms at any age; thirdly, in the early stage of tubercular disease; fourthly, in rupture of the ureter; and, lastly, in ureteral fistula. 3. That nephrectomy should not be resorted to until after the failure of other measures—first, in subcutaneous laceration of the kidney; secondly, in protrusion of the kidney through a wound in the loin; thirdly, in recent wounds of the kidney or of the ureter, inflicted in the performance of ovariotomy, hysterectomy, or other operations; fourthly, in suppurative lesions; fifthly, hydronephrosis and cysts; sixthly, in calculus of an otherwise healthy kidney; and, finally, in painful floating kidney. 4. That nephrectomy is absolutely contra-indicated—first, in sarcoma of children; secondly, in carcinoma at any age, unless, perhaps, the disease can be diagnosticated and removed at an early stage; and, thirdly, in the advanced period of tubercular disease.

SALICYLIC ACID AND CASTOR-OIL IN PSORIASIS.

Dr. Fox, of New York, showed, at a meeting of the New York Dermatological Society, a girl, eight years old, who had psoriasis covering all the body. The patient's father and sister also had psoriasis. When she was admitted to the hospital a two per cent. solution of salicylic acid in castor-oil was applied to the right arm, a weak solution being used because of the great congestion of the skin. When the patient was shown, the scaling was less, and many of the patches had disappeared, although the disease was extending in other directions. To the left arm the mixture of oxide of zinc and balsam of Peru had been applied, and there was even less congestion in this situation. In the second case the lower extremities were chiefly affected. This patient was peculiarly susceptible to the action of ammoniated mercurial ointment, even a very small quantity exciting severe dermatitis. Chrysarobin pigment had been applied to the right leg, and a five per cent. solution of salicylic

acid to the left leg, producing a marked improvement in the condition of the eruption in the latter situation.—*Journal of Cutaneous and Venereal Diseases*, Vol. III., No. 5; and *Philadelphia Med. Times.*

A CASE OF PARALYSIS OF THE LOWER EXTREMITIES WITH HYPERTROPHY OF THE SKIN, SUBCUTANEOUS AND MUSCULAR TISSUES.

Dr. John K. Mitchell, in the July number of *The American Journal of the Medical Sciences*, records a curious case, that of a female, aged fifty, which presents several unusual conditions: paralysis, without any degenerative reaction, enormous hypertrophy of the skin and subcutaneous tissues, and increase of the size of the muscles due to the extraordinary overgrowth of their fibrillar elements. It has certain features in which it resembles scleroderma, and some that are like elephantiasis, and without the microscopic investigation it might have been taken for what on the first superficial examination of the patient it was thought to be—pseudo-hypertrophic paralysis. But the skin had not the tense, hard induration which scleroderma shows. Scleroderma is usually found with more or less pigmentation; it begins with pain and œdema, and is nearly always accompanied by atrophy of the underlying muscles, and though it varies in position and may be limited or diffuse, it is seldom or never so absolutely symmetrical as the lesion described. Certainly there is a slight likeness to elephantiasis in the skin condition, but the general fever and inflammatory symptoms of that disease were never present, nor has the course been like that of elephantiasis, which progresses by recurrent attacks. Nor on careful comparison does it seem much like the pseudo-hypertrophic paralysis. The age of the patient—this paralysis is almost unknown in adults except where it has continued from infancy—the persistence of the knee-jerk, and the troubles being, even after lasting so long, entirely confined to the lower extremities, are some of the differences. Here, too, no loss of voluntary contractility in any other than the affected muscles, nor any atrophy of the pectoral or dorsal muscles—a condition which Gowers calls diagnostic of pseudo-hypertrophy—could be discovered. To the eye and touch, besides, the muscles in this case were much more lumpy and less homogeneous than they are in the false overgrowth. A few cases of true muscular hypertrophy have been reported. The overgrowth in all of them was limited to the muscular tissue, and the malady began after great and long-continued exertion, or after depressing disease or injury. All of them were unilateral and in one limb only. Studies of extracted fragments of muscles showed the fibres to be double the natural breadth, and demonstrated an increase in the number of nuclei. So far as Dr. Mitchell has been able to discover during the year which has passed since he first examined the case, there has been nothing like it known, and he thinks he has good grounds for saying that the complexus of symptoms is entirely a new one.

In Memoriam.

FREDERICK W. WARREN,

M.B., M.A., Univ. Dub., F.R.C.S.I.

The roll of those who have been lost to the profession, within a recent period, is increased this month by the widely-lamented death of Mr. Frederick W. Warren, who died on Sunday, October 11th, at his residence, 32 Harcourt-street, Dublin, from a severe attack of typhoid fever.

Mr. Warren was Surgeon to the Adelaide Hospital, Demonstrator of Anatomy in the Royal College of Surgeons, Surgeon to St. James' Gate Dispensary; he formerly held the posts of Resident Surgeon, Curator of Museum, and subsequently Lecturer in Anatomy in Steevens' Hospital School of Medicine, of which School he was a most distinguished pupil, being the Cusack Medallist in 1869–70 and 1870–71, and obtaining the Senior Surgical Prize in 1870. He was one of the chief workers in the Steevens' Hospital School of Medicine, and it was mainly owing to the ungenerous way in which the Governors treated his candidature for the appointment of Physician (although unanimously recommended by the Medical Staff) that the School received its *coup de grace* and ceased to exist. The fact of his non-election created great excitement in the School and Hospital at the time, and, as a consequence, Mr. Warren resigned his Lectureship in Anatomy, and the School was shortly afterwards closed by the other proprietors.

When just twenty-one, Mr. Warren took the licence of the Royal College of Surgeons in 1871, and that of the King and Queen's College of Physicians in 1872. He proceeded to the Fellowship of

the former College in 1877, taking the degree of Bachelor of Medicine in 1879, and Master of Arts in 1883, of the University of Dublin.

Mr. Warren contributed several articles of exceptional merit to the *Irish Hospital Gazette* and *The Lancet*. Few of those who listened to his admirable introductory lecture, delivered at the opening of the Winter Session, 1883, in the Adelaide Hospital, would have thought that his career, so full of bright hopes and promise, was so soon to close.

At the time of his death Mr. Warren had acquired a high reputation as an anatomist, a practitioner, and a teacher; but it was in the latter capacity that he especially excelled, and the students under his care profited in no small degree by his clear and skilful exposition of all the matter pertaining to their courses of instruction; he possessed in a marked degree the art of lucidly explaining the most difficult subjects and conveying them to the minds of his hearers in a simple manner. This brilliant power of exposition, and his kind and genial manner rendered him one of the most popular of teachers, and a universal favourite with his pupils. To his bereaved widow and children, whom he loved with intense devotion, his loss is irreparable. Few people could know Mr. Fred. Warren without liking and admiring him; his nature was singularly frank and open-hearted, and his disposition most amiable and unselfish, while he was modest and diffident of his own powers almost to a fault. Cut down in the flower of youth (for he was only thirty-three years of age), in the full sunshine of prosperity, and just when a career of seemingly ever-growing success was opening to him, Mr. Warren will be deeply and sincerely regretted by those who were his colleagues, his college companions, his pupils, and his friends.

"Brief life is here our portion,
Brief sorrow, short-lived care;
The life that knows no ending,
The tearless life is there."

D. E. F.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CLXVIII.—DECEMBER 1, 1885.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. XX.—Notes on Fifteen Cases of Enteric Fever contracted during the Military Operations at Suakim, and treated in Argyle Ward, Royal Victoria Hospital, Suez, Egypt. By SURGEON-MAJOR GORE, M.D., F.R.C.S.I., Senior Medical Officer, - - - - 441

ART. XXI.—On the Anatomical Knowledge and Original Discoveries of Irish Surgeons. By SIR CHARLES A. CAMERON, President of the Royal College of Surgeons, and formerly Professor of Anatomy to the Royal Hibernian Academy of Fine Arts, &c., - - 453

ART. XXII.—The Hospitals of the House of Industry. A Historical Sketch. By WILLIAM THORNLEY STOKER, one of the Surgeons to the House, - - - - - - - - 469

ART. XXIII.—A Case of True Relapse in Enteric Fever. By J. W. MOORE, M.D., M.Ch., Univ. Dubl.; F.K.Q.C.P.; Physician to the Meath Hospital and County Dublin Infirmary; formerly Senior Physician to Cork-street Fever Hospital and House of Recovery, Dublin; Ex-Scholar, Trin. Coll. Dubl.; Lecturer on Practice of Medicine in the Carmichael College of Medicine, Dublin, - - 486

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. The Insane in the United States and Canada. By D. HACK TUKE, M.D., LL.D., - - - - - - - - 492

2. School Hygiene and Diseases incidental to School Life. By ROBERT FARQUHARSON, M.P.; M.D., Edin.; F.R.C.P., Lond.; LL.D., Aberdeen; formerly Assistant Physician to St. Mary's Hospital; Physician to the Belgrave Hospital for Children, and Medical Officer to Rugby School, - - - - - - - 496

3. Elements of Pharmacy, Materia Medica, and Therapeutics. By WILLIAM WHITLA, M.D., Physician to the Belfast Hospital, &c. Third Edition, - - - - - - - - 499

PAGE

4. Dwelling-houses: their Sanitary Construction and Arrangements. By W. H. Corfield, M.A., M.D., Oxon.; F.R.C.P., Lond.; Professor of Hygiene and Public Health at University College; Medical Officer of Health and Public Analyst for St. George's, Hanover-square. Second Edition, - - - - - - - 500
5. Contributions to the Surgical Treatment of Tumours of the Abdomen. Part I.—Hysterectomy for Fibrous Tumours of the Uterus. By Thomas Keith, M.D., LL.D., - - - - - - 501

PART III.—HALF-YEARLY REPORTS.

Report on Materia Medica and Therapeutics. By Walter G. Smith, M.D., Univ. Dubl.; F.K.Q.C.P.I.; Physician to Sir Patrick Dun's Hospital; King's Professor of Materia Medica, School of Physic, Trin. Coll. Dubl.:—

1. The Constituents of Ergot and their Physiological Action, - 504
2. Effect of Phosphorus on the Fœtus, - - - - 505
3. Coca and Cocain, - - - - - - 506
4. A New Method of treating Tinea Tonsurans, - - - 507
5. The Oleates, - - - - - - - 508
6. Treatment of Lupus, - - - - - - 509
7. Oil of Eucalyptus, - - - - - - 509
8. Naphthalin, - - - - - - - 510
9. Medicated Pastes, - - - - - - 511
10. On Certain New Methods in the Treatment of Diseases of the Skin, - - - - - - - - 513

PART IV.—MEDICAL MISCELLANY.

Sanitary and Meteorological Notes. Compiled by J. W. Moore, M.D., F.K.Q.C.P., F. R. Met. Soc.:—

Vital Statistics of the Eight Largest Towns in Ireland, for Four Weeks ending Saturday, November 7, 1885, - - - 519
Meteorology—Abstract of Observations made at Dublin for Month of October, 1885, - - - - - - 522

Periscope:—

Thallin, - - - - - - - - 503
The Treatment of Hæmorrhoids by Injection, - - - 518
Aspiration of the Aorta, - - - - - - 524
Erysipelas, - - - - - - - 525

Index to the Eightieth Volume, - - - - - 526

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

DECEMBER 1, 1885.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XX.—*Notes on Fifteen Cases of Enteric Fever Contracted during the Military Operations at Suakim and Treated in Argyle Ward, Royal Victoria Hospital, Suez, Egypt.* By SURGEON-MAJOR GORE, M.D., F.R.C.S.I., Senior Medical Officer.

THE Royal Victoria Hospital, Suez, with a capacity to receive 307 patients—one-third in Indian-European privates' tents—was opened on March 2, 1884, in connection with the Suakim Field Force, and received from that date up to the 17th of September 1,211 patients, more than 70 being cases of enteric fever presenting nearly every variety of the disease, from its mildest to its gravest form, with an ample field for study. All these last were recorded, and the temperatures regularly taken. *Post-mortem* examinations were made in the fatal cases, with one exception (a private of the Medical Staff Corps, who expressed a wish that it might not be carried out). A special staff of nursing sisters from the leading London hospitals was appointed, and all that could conduce to the comfort and happiness of the sick soldiers was amply supplied by Government upon the recommendation of the Director-General.

Of the 1,211 cases admitted only 21 died—a mortality of 1·7 per cent.! Thirteen of the 21 deaths were from enteric fever. Some of the latter were in a very grave state when they came under our care, struck down by the virulence of the poison. The following

brief remarks refer only to those treated in the best ward of the hospital—a pavilion, constructed of wood, raised some 2½ feet from the ground on metal supports, with ample cross, roof, and end ventilation; the closets separated to leeward. All enteric stools were received into vessels containing disinfectants, removed to a distance and buried. As a matter of fact, the patients were for the greater part of the time in a "fresh air bath," but of a high temperature, varying from 83° to 97° Fahr., with occasionally sand storms and oppressive southerly winds raising the temperature to over 100°. There was an abundant supply of ice, which was freely made use of, and proved of infinite value.

Ætiology.—Youth and the vicissitudes of field service; average age, 23·2 years. Twelve of the 15 had been only two or three months in the field. Among this class occurred the most severe, and two of the fatal, cases. Three of the severer cases were only 21 years of age; the others, 24, 26, and 28 respectively. Age of fatal cases, 21, 24, 26; the last by far the worst—a patient who had been at Suakim a very hard drinker. Length of service on the Red Sea littoral did not seem to have aggravated the predisposition or rendered the subsequent attack more grave, except in one instance. Of this class, No. 1 was eleven months at Suakim; duration of pyrexia to normal 15 days, requiring no special treatment for complications. No. 2, on shore twelve months; duration of pyrexia, 21 days; no complications. No 3, in all expeditions, 11 months on shore; complicated with hæmorrhage in the fifth week; died in sixth from œdema of lungs. Appearance of large gut pointed to a former attack of dysentery; the intestinal lesions were in this case in process of resolution, but the "course of the fever" and the hæmorrhage had enfeebled the system, and led to heart failure and its consequences. The patient made a good rally at the last in spite of these adverse influences.

Varieties.—Judged by the symptoms and course of the fever, 10 were of the mild and 5 of the grave form; 3 of the latter died. Seven of the former required no special treatment for complications; in the remaining 3 excessive diarrhœa had to be moderated by astringents; in one of these the looseness occurred only with the relapse. Judged by the temperature, 4 of the mild form of Murchison would be classed as abortive fevers by German authors, as the duration of the pyrexia was only 13, 14, and 15 days respectively. In the remainder the fever process continued from 19 to 26 days; 4 were 21 day fevers only.

Mortality.—20 per cent. in these cases. This does not, however, represent the real mortality, as 5 cases were subsequently treated on the same system in the ward, all ending in recovery, lowering the death-rate to 15 per cent.—lower than the normal average, 1 in 5·4 cases. Cause of death in the fatal cases—Hyperpyrexia and its sequelæ, 1; œdema of lungs and brain, 1; intestinal hæmorrhage, 1. Total 3.

Specific eruption doubtful or absent in one-third of the cases. Very characteristic in several; on abdomen chiefly.

Temperature on Admission.—In two-thirds, 103° or 104°; remaining third, 102°. Temperature curve in several irregular, but very similar to that observed in India. The following case, not included in the table, having been admitted later on (27th July), is a very typical chart of a very typical case terminating on the 21st day. The patient, an able seaman, was transferred from H.M.S. Bittern, which had left Suakim about a week, where she had been moored off a reef of coral, which at low tide was said to have given off an offensive smell. He had been only once on shore, for a few hours. The general appearance of the patient, the tongue, plentiful crop of spots, feeling of lassitude, slight gurgling and tenderness in right iliac fossa, and looseness (when it occurred), were diagnostic. The case presented these peculiarities, that the bowels were only opened twice and the pulse abnormally slow. (See chart, p. 444.)

Relapse.—Eight of the fifteen had a relapse, as noted below, but not always with a recrudescence of abdominal symptoms.

No. of Case	Initials	Age	Max. of Temp. °	Duration in days	Diarrhœa or Constipation	Health on Termination
2	J. M.	22	102·6	15	Confined obstinately -	Indifferent
4	H. B.	18	103·6	9	Confined - - - -	—
5	F. W.	22	100·4	11	Loose - - - -	Anæmic; weak
7	C. L.	21	102·4	8	Loose - - - -	Indifferent
10	F. M.	21	102	9	Confined - - - -	Indifferent
11	W. S.	30	104·2	14	Much diarrhœa, with hæmorrhage	Died in 6th week
12	T. W.	29	103	12	Much diarrhœa -	Indifferent
15	A. M.	21	103·2	11	Very loose - - -	Indifferent

CHART OF TEMPERATURE, &c.

Name, Greyson; *Disease*, Enteric Fever; *Result*, Recovery.

Nos. 11 and 15 were the most serious of these relapses as far as the abdominal symptoms went, the diarrhœa being, in the first, complicated with hæmorrhage and much ulceration of the agminated glands, though not with any great tenderness or swelling; while in the last case the abdomen was very characteristic and tympanitic, and the tongue thickly coated with a whitish-yellow fur. I noticed a similar tongue at one time in No. 2, whose bowels were obstinately constipated, requiring enemata and later small doses of castor-oil.

Tongue.—The commonly typical typhoid tongue, moist at first, small and pointed, red at tip and edges, with large papillæ, and a whitish or yellowish fur, was not always very well marked, though in some very characteristic, especially when there was much intestinal irritation. In others the tongue was thinly coated with a white fur, rather redder than natural at the tip and edges, and not very pointed. In the later stages it was glazed and dry, requiring the frequent application of glycerin, which gave much relief. In three cases it was large and thickly coated. In one of these the disease had followed an attack of dysentery.

Pulse.—80 to 90 in milder cases at the maximum; in severe, over 100; in the fatal cases, 130, 140, 160; in one abnormally slow, 68 to 80.

Thirst was a constant symptom, and in one case there was much nausea and vomiting.

Epistaxis occurred in two instances, but was easily controlled.

Chest symptoms very prominent in 3; moderate in 1. In 2 of the first broncho-pneumonia; in 1 œdema of lungs. In No. 4 the symptoms pointed to slight bronchitis only. No. 3 of these cases was fatal.

Cardiac failure prominent in Nos. 11, 13, and 14; the pulse rose up to 140, 150, 160. All died. Hyperpyrexia appears to have been the cause in 2; the prolonged fever in the other.

Diarrhœa was in excess only in 6 cases—3 primary and 3 during the relapse. When it occurred the pea-soupy appearance and offensive odour were characteristic.

Tympanitic distension, tenderness and gurgling in right iliac fossa were very slight or absent in the abortive cases. In one case the tenderness and gurgling were very marked in the left iliac fossa and absent in the right.

Head symptoms were very marked at the onset in 3, moderate in 1, and excessive at the end in a third fatal case. Two of the

first died. Slight but transient delirium was present in two. One patient, who ultimately made a good recovery, lay in an apathetic state for days, and was with difficulty roused to take his medicine and nourishment.

Temperament.—This patient was a marked contrast to another equally severe case in the next bed, who though seriously ill aided much the treatment adopted by his cheery manner and determination not to die—an important factor in this and other diseases.

Sleeplessness occurred in several, requiring sedatives at night.

Hæmorrhage from the Bowels.—This serious symptom occurred in two, in the first and fifth week respectively. Both died. In another there was a severe bleeding from old-standing piles, which, in lowering the temperature, appears to have led to a persistent amelioration of the symptoms. In all the temperature chart showed a marked fall for the time, as usually occurs with hæmorrhage from the bowel.

Connection with Dysentery.—In one case, a finely made non-commissioned officer of the Royal Horse Artillery, there was at first a characteristic attack of dysentery with a low range of temperature, followed by a relapse to 103°, general abdominal symptoms, spots, and the usual diarrhœa of typhoid. The first had subsided under ipecacuanha treatment entirely. This was my only case where the two diseases occurred together, but the *post-mortem* examination in the case—which terminated fatally in the sixth week with extensive ulceration of the lower end of the ileum (a man who had spent a year at Suakim and gone through all the expeditions there)—showed that at some previous date he must have suffered from dysentery of a rather severe type.

Convalescence was slow, and in some there was much loss of muscular strength and tissue. All the cases were recommended for change of climate. Bed-sores occurred in only two. In both the fever had been long and irregular; both had had hæmorrhage from the bowels. As convalescence continued there was a constant craving for solids, which was with difficulty contended with. In some when first partaken of there was a slight recrudescence of pyrexia, which soon passed away. In one only was this persistent, requiring a return to liquid nourishment again. I quite agree with the well-known army dictum that a soldier is not much good for a soldier's work for three months after an attack of ordinary typhoid.

Day on which reported sick.—The third or fourth after first feeling unwell and feverish.

Average duration of primary fever in cases which recovered, 19 days. Limits—minimum, 13; maximum, 26.

Pathology.—Membranes of brain much congested in 2; œdematous in 1. *Brain:* marked "puncta vaculosa" in 1; few in No. 2, substance firm; brain flabby and membranes œdematous in No. 3. *Cerebro-spinal fluid:* a good deal flowed away in all—three or four ounces. *Condition of lateral ventricles:* empty. In the first two there was much delirium; in the last, coma (a prolonged case). *Heart* firmly contracted in No. 2, no clots; enlarged and softened in No. 3. *Lungs* crepitant, and floated in water in No. 2; crepitant at anterior margins, but with a good deal of serum and congestion at bases, especially right, in No. 3. *Stomach* pale and healthy in No. 1; cardiac end much congested in No. 2; very much pigmented in No. 3. *Duodenum and upper intestines* healthy, or with few superficial patches of congestion. *Ileum* in No. 1 healthy to lower end, where congested in patches, with hyperæmia of some of the agminated glands, and one ulcer; on ileo-cæcal valve three ulcers. No. 2—Much fluid blood in intestines; mesenteric glands much enlarged and hyperæmic; lower six feet of ileum much congested; solitary glands and Peyer's patches ulcerated (15); mass of ragged ulcers where joined cæcum. No. 3—Healthy to lower three feet, where were twenty ulcers in various stages of cicatrisation, varying in size from that of a threepenny bit to that of half-a-crown; pale and healthy to within six inches of ileo-cæcal valve. *Large gut* in No. 1 much congested in patches, especially near ileo-cæcal valve, where were three ulcers of solitary glands. No. 2—Seven ulcers in vicinity of cæcum, with much congestion. No. 3—Fleshy; mucous membrane congested superficially in patches; no ulcers. *Liver* in No. 1 congested; in No. 2 of a pale, nutmeg colour, and much enlarged, hard; No. 3 very much enlarged, especially upper right lobe, dark brown in colour, congested on section. *Spleen:* No. 1 not much enlarged, but of a dark chocolate colour, and easily broken down; No. 2 much enlarged, softened, and of a dark chocolate colour; No. 3 not much enlarged, but of a dark chocolate colour, and friable. There were no entozoa.

General Management.—The patients were admitted in their service uniform oftentimes much soiled and worn. This was carefully removed. They were then sponged down and dressed in clean hospital garments, placed in a comfortable bed, and given a suitable restorative—both an immense source of relief to the individual. On one occasion 96 sick were disembarked at Suez Docks, entrained,

moved three miles to camp, detrained, the most severe cases placed on stretchers, carried by men of the Medical Staff Corps to the hospital about 200 yards distant, and in their respective wards within the hour. The ward contained twenty beds. The patients were looked after by two excellent orderlies of the medical staff and a nursing sister, who exercised a general supervision, administered the medicines and stimulants, took the temperature, saw that the diet drinks were properly prepared, iced, and given as directed. One or two night orderlies were on duty, and a special case was allowed extra attendance. The nursing sister on night duty went her rounds several times. The orderly medical officer saw all the patients at 5 p.m., and was called when any sudden alarming symptoms occurred, and prescribed such medicines and gave such orders as were necessary. He resided in the hospital. I visited the ward at 9 a.m. and 6 p.m. Mosquito nets were supplied to each bed, a fan and whisk given to each patient. A few bright flowers served to decorate the ward, which was kept scrupulously clean and well ventilated. From first to last there was not the least offensive odour. The bed pan, into which a disinfectant was previously placed, was used by those confined to bed, and the stool immediately removed covered—the close stool or closets by convalescents. The latter were on the dry earth system, to leeward of the ward, separated by an intervening passage of free air. In practice the foregoing arrangements were found to be entirely effective on the well-being of the cases. An ample supply of the latest novels and papers (a contribution from the National Aid Society) was freely made use of by convalescents while still confined to bed, and much appreciated. At intervals the more advanced convalescents were taken in the steam launch down the Gulf of Suez with marked benefit, a good subsequent sleep being the immediate result, as well as a more rapid recovery in cases where symptoms of sleeplessness were present, convalescence slow, and the appetite impaired. Patients invalided to England were either embarked at Suez Docks or railed to Alexandria in charge of a medical officer.

Food and Drinks.—The former was altogether in the liquid form of concentrated beef-tea (28 oz. to a pint), Liebig's essence, Brand's essence; chicken tea made from the fresh fowl or preserved; goat's milk with soda water and ice; bread crumb soaked in boiling water and then added in small quantities to the milk when suitable to the case—Swiss milk sweetened or unsweetened.

This was invariably used in the afternoon and at night, as the goat's milk would not keep; ice *ad libitum*, jelly; lemonade made from limes was the usual drink to assuage thirst in the hotter part of the day, and of much advantage to men who had been previously living on preserved meats. One or two pints were given daily. In fever no drink is so refreshing as this. To two or three barley water was given, but the patient soon tired of it. All solid food was absolutely prohibited until convalescence was well advanced and the temperature normal for some time, and then with moderation at first. Bread was first tried, then meat finely cut up, and so on to ordinary rations.

Stimulants rarely exceeded two to three ounces of brandy daily in the later stages, when the strength had been reduced, the pulse was feeble, and the appetite indifferent. Where symptoms of pneumonia were present, or failure of the heart was indicated, they were pushed to 8, 10, or 12 ounces; 8 oz. of very good Medoc were given daily to some of the convalescents in the early stage, with or without a previous issue of brandy—eight ounces at a time. It seemed to agree in most instances. On one occasion Taragona port was ordered when diarrhœa was rather profuse, but as a rule brandy was relied upon and found quite sufficient in the moderate doses noticed. When convalescence was well established the patients were allowed a pint of beer daily. One pint of champagne was used as a last resource with the case which terminated in the sixth week in death. Whatever was given was given with orders and in moderate quantities at a time distributed over the 24 hours. No stimulants were left in the hands of patients or orderlies, but locked up in the ward press until issued.

Spongings.—In the milder cases the patient was sponged down twice with tepid water, 11 a.m. and at 3 or 4 p.m. In the more severe cases a third and fourth sponging was had recourse to with iced water. In such cases a full dose (20 grains) of quinine was administered immediately afterwards, both combined, usually causing a reduction of two or three degrees in the temperature. In case No. 13, when the temperature had reached 105°, with delirium and other serious symptoms, a tepid sponging, application of the ice cap, and administration of 40 grains of quinine subsequently, caused the temperature to fall to 101°, while at the same time the delirium ceased and consciousness was completely restored, but the effect was not permanent. This patient ultimately died with symptoms of heart failure. The tepid sponging was the most

grateful to the patient, and upon the whole the most effective in practice.

Ice Cap.—In all cases with much pyrexia and tendency to heart symptoms, or sleeplessness with pyrexia, this was invariably applied with undoubted benefit. By its means sleep was induced, and the patient expressed himself greatly relieved and desired its continuance. A large dose of bromide of potassium was occasionally added, combined or not with chloral as circumstances indicated.

Therapeutic Treatment.—For many reasons it is always of advantage to endeavour to lay down a common-sense line of treatment, and such as previous experience indicates as having been of value where a large number of typhoid cases are expected. It soon becomes understood by the attendants and patients, does away with all confusion, and conduces to regularity in the administration of drugs, and relieves a compounder from much needless worry. As the result of previous experience in the tropics, I have come to the conclusion that enteric fever is there best treated on a modified antipyretic system, such as quinine, antipyretic draughts (quinine, mineral acids and digitalis to steady the heart's action), tepid or cold sponging to assist, the ice cap to allay nervous excitement or obviate brain mischief, and sedatives at night to procure sleep; and as the fever progressed a moderate quantity of alcoholic stimulants to aid digestion, restore strength and stimulate a feeble circulation, and I have no reason with later experience to modify this opinion. Acting on these lines, the following ward mixtures were almost entirely had recourse to, except where special exigencies contra-indicated:—Quinine, 5, 10, 15, and 20 grains to the ounce mixtures; antipyretic draught:—tincture of digitalis, ♏ xv.; nitro-hydrochloric acid, ♏ x.; quinine, gr. 5; spirit of nitrous ether, ♏ x.; solution of acetate of ammonium, ʒiss.; camphor water to ʒi.—mix, at intervals of three or four hours. Sedative at night:—bromide of potassium, gr. 25; chloral, gr. 15; spirit of chloroform, ♏ x.; mucilage, ʒi.; camphor water to ʒi.—mix, at 9 p.m. when ordered. In more than ordinary diarrhœa:—prepared chalk, ʒii.; bismuth, gr. 100; tincture of catechu, ʒii.; tincture of opium, ʒi.; spirit of chloroform, ʒv.; infusion of logwood to ʒx.—mix, one ounce for a dose. In excessive diarrhœa:—dilute sulphuric acid, ʒii.; tincture of opium, ♏ xlviii.; spirit of chloroform, ʒii.; infusion of logwood to ʒviii.—mix, one ounce as required; half a grain of carbolic acid in pill, if necessary, in addition. In intestinal hæmorrhage:—half a grain of ergotin hypodermically morning and evening, bismuth

astringent mixture, ice, iced compress to abdomen, perfect rest in recumbent position until all signs had disappeared. This line of treatment proved entirely effective in one severe case of hæmorrhage. In abdominal pain and tympanites:—turpentine stupes or spongiopiline, soaked in hot water and sprinkled with opium, was used with advantage. Linseed poultices give relief, but I think increase the tendency to diarrhœa. In the case where enteric symptoms followed upon an attack of dysentery, Dover's powder, with carbonate of bismuth, was given at night while the diarrhœa prevailed, in addition to other measures. In the exceptional case attended with constipation, ʒii. of castor-oil were given at intervals, and enemata per rectum. In chest symptoms, with a tendency to or actual pneumonia, carbonate of ammonium and expectorants in infusion of senega, or bark with quinine, linseed poultices, and increased doses of brandy proved of decided advantage. In one case aconite was tried. In none of these cases were there any symptoms of perforation requiring special measures. Convalescence was assisted in the later stages by a mixture containing compound tincture of bark, aromatic spirit of ammonium, tincture of nux vomica, and dilute phosphoric acid, or citrate of iron and quinine, tincture of orange peel and spirit of chloroform. Bed-sores were protected from pressure, dressed with some stimulating ointment, and the patient was placed upon an air bed. While head symptoms were severe, blisters were applied to the vertex or back of the neck, in addition to other treatment. Two of the four cases where applied recovered.

Effect of previous Movement inseparable from a Campaign.—All the patients had been moved from the front to the hospital at Suakim; thence to the docks at Suez—a three days' journey—where they were disembarked, placed in cots or stretchers, and conveyed by rail to the sliding opposite the Royal Victoria Hospital, a distance of some three miles, taken out of the train and carried to their wards some two hundred yards. These several movements, carried out with care, apparently had no bad effect.

Large and Small Wards.—I think there can be no question but that a large, airy, and well-ventilated ward, such as the foregoing cases were treated in, is infinitely preferable for typhoid patients to smaller rooms, where the administration is much more difficult to carry out, and the nursing not so easily controlled. This was certainly our experience at Suez. In such a ward the chances of infection are reduced to a minimum.

Our joint Experiences.—Up to the 26th of August my colleagues (Surgeon-Major Bennett and Surgeons Trewman and Robinson) and myself treated in all 63 cases of typhoid. Of these 13 died—a mortality of 20·6 per cent. If to these were added several subsequent cases without a casualty, the death-rate would have been reduced two or three per cent.

Relapses 22, or nearly one-third of those treated.

Diarrhœa occurred in 38.

Specific eruption noticed in 24 with certainty.

Hæmorrhage from the bowels, 9; of these 6 proved fatal ultimately. In one who recovered (a soldier of the Australian Contingent) there had been a very profuse early hæmorrhage, which blanched the patient, and from which he was with difficulty rallied, and which led to a long relapse and very slow convalescence, accompanied by anæmia; in a second it was slight, and in the third it was associated with piles.

Epistaxis occurred in 2 cases only.

The spleen was found increased in size in most of the fatal cases, in some very much so, of a dark chocolate colour and very friable.

Perforation of the bowel noticed in 4 of the 13 fatal cases.

Ulceration of the glands of the ileum noticed in all who died in a varying degree from a bowel so rotten that it was a marvel how the patient could have survived so long with a mass of ragged ulcers, to a few characteristic ones with superficial or dark-coloured congestion of the mucous membrane.

Disease of the Colon.—Congested in parts or ulcerated in a few of those who died.

Entozoa.—A round worm was found in one who had suffered from persistent diarrhœa.

Mesenteric Glands.—These were usually enlarged opposite the affected portion of the gut, hyperæmic or softened.

Pneumonia.—In some of the fatal cases signs of this affection, or of congestion of the posterior margin of the lungs, were noticed. As a rule, the lungs floated in water.

Heart, Liver, Kidneys.—The condition of these organs varied.

Range of temperature varied much, was often very irregular, or showed a long series of daily vacillations of two, three, or four degrees, or fairly normal with a rise of a degree each day to 103° or 104° on the third or fourth evening—a period of continued fever of varying duration and vacillations towards the close until 98·8° was reached.

ART. XXI.—*On the Anatomical Knowledge and Original Discoveries of Irish Surgeons.*[a] By SIR CHARLES A. CAMERON, President of the Royal College of Surgeons, and formerly Professor of Anatomy to the Royal Hibernian Academy of Fine Arts, &c.

REGARDING as I do the Surgical Section of the Academy of Medicine as the old Surgical Society of Ireland under a new name, I cannot but feel how poorly its present President compares with the great majority of his predecessors. From this chair eloquent and instructive addresses have been delivered by many of the greatest surgeons which this country has produced. There are present those who can recall to their mind's eye the vanished forms of Crampton, Colles, Carmichael, Porter, Cusack, Jacob, and Harrison as they stood, in days long gone by, in the place which I now, by your kind sufferance, occupy. In the early days of the Surgical Society the leading surgeons of this city were rarely absent from its meetings, which were also largely attended by the younger members of the profession and by students. The addresses which were delivered from the Presidential Chair were listened to with great attention and interest because they were words of wisdom from the lips of men who spoke with acknowledged authority. The Presidents were masters of their art, because they were endowed with great natural gifts, were thoroughly educated in the principles of their profession, and had an extensive knowledge of those afflictions of mankind which demand the surgeon's aid. I am incompetent to address you as those men did. I can neither imitate their style nor supply you with that rich professional pabulum which they served so abundantly to *their* hearers. I can, however, speak of their useful labours and of their successful efforts to enlarge the boundaries of the domain of medicine; and I may perhaps be able to draw a few conclusions therefrom having some relevancy to the present state of our profession and of surgical education in this city. I have long been of opinion that the surgical fame of the men to whom I have referred, and of the Irish surgeons in general, during the earlier decades of this century was largely due to their excellent knowledge of anatomy. I propose, therefore, to consider in this address the subject of anatomical teaching in Ireland, and briefly to notice some of the

[a] Presidential Address delivered before the Surgical Section of the Academy of Medicine, 13th November, 1885.

more important discoveries in human and comparative anatomy made in this country.

Dublin is the first British city in which the professors of the healing art were incorporated. In 1446 King Henry VI. established in it by Royal Charter a fraternity, or guild of barbers.[a] I have satisfied myself that in the fifteenth century in Dublin at least the terms barber and surgeon were exactly equivalent, for although the charter in question incorporated barbers, it specifically states chirurgery was the art which they were to practise. It is noteworthy that this early surgical corporation were empowered to admit women to all their rights and privileges—a piece of justice and fair play which the present surgical corporation of this city imitated 440 years later. Our first guild of surgeons have left no records of their proceedings, and we cannot now ascertain whether or not they were enabled to study anatomy. A charter granted by Queen Elizabeth incorporated with the guild of barbers a society, or community of chirurgeons who had come into existence in the 16th century. In this charter, though the terms "theory and practice of chirurgery," are made use of, and a reference is made to the study of the art, no special provision for anatomical teaching occurs in it. I incline to the opinion that about this time the barber-chirurgeons were considered to be of greater social rank than the members of other guilds, for in 1645 the Ulster King-at-Arms granted permission to such of them as had no certain knowledge of their ancestral coat of arms to have the arms of the Barber-Surgeons Company "emblazoned on his hearse whilst the funeral was being celebrated after the most decent manner befitting his quality." Those who were "gentlemen of blood or coat armour" were to have their own arms and those of the guild exhibited on their hearses whilst their obsequies were being conducted. The King-at-Arms further refers to the barber-surgeons' calling as a "profession."

By a charter granted by King James II. in the year 1687, the barber-surgeons were incorporated with the apothecaries and peruke makers, a combination that lowered the status of the surgeon considerably. In this charter we find four members of the incorporation described as "Readers of Anatomy," from which one

[a] The archives of the Barber-Surgeons Company would probably have been destroyed had they not fortunately come into the possession of the late erudite Dr. William Daniel Moore, of 40 Fitzwilliam-square, West, Dublin. He deposited them in the library of Trinity College, Dublin.

may infer that there was some instruction given in anatomy, though probably it was mostly, if not altogether, confined to lectures and exhibition of plates or drawings. The charter provided for the examination of persons proposed to be indentured as apprentices, and also for the examination as to the competency of candidates for admission to the guild. It is remarkable that in none of the charters granted to the Dublin surgeons is there any provision for supplying them with subjects for dissection.

In 1505 the surgeons and barbers in Edinburgh were incorporated, and their charter ordained that the persons admitted to the corporation should be acquainted with anatomy, and that each year the corporation were to receive for dissection the body of an executed criminal. In 1541 the London Corporation of Barbers and Surgeons were by charter entitled to receive annually for dissection the bodies of four executed criminals.

In the charter granted in 1692 to the King and Queen's College of Physicians it was ordained that the college should be entitled to receive annually the bodies of six executed malefactors for "anatomies," so that they might have "further and better knowledge, instruction, and experience in the faculty and science of physic and surgery." From this we must infer that the Fellows and Licentiates might, if they wished, legally practise surgery, notwithstanding the privileges of the Barber-Chirurgeons' Company. In relation to this point it is noteworthy that in an Act of Parliament passed in 1743 a Professorship of "Surgery and Midwifery" was constituted in connexion with the College of Physicians.

It is evident that there were very few opportunities of studying anatomy in Ireland up to the middle of the last century. The instruction in the Medical School of the University appears to have been confined chiefly to professorial demonstrations. There was very little dissecting-room work such as we now have. One of the statutes of the University, framed by Sir William Temple, provided that every candidate for a medical degree must have been present at the dissection of three bodies. It is probable that these so-called dissections were often little more elaborate than an extensive *post mortem* examination for pathological purposes. That the College of Physicians occasionally claimed the bodies of executed persons is shown by some records referred to in Dr. Belcher's work on the College. An account-book, beginning in 1672, mentions the items of expenditure incurred in connexion with the dissection of a body. The total is £2 4s. 10d., of which 9s. was given to the

"souldiers who watched," and 3s. to "the said souldiers in drinke." Some years later Molyneux describes the dissection of a malefactor, and the conversion of his osseous remains into a "skeleton." He says that the dissection lasted for a week, and that the chirurgeons and physicians present at it "spoke at random as the parts presented themselves."

Early in the eighteenth century there were several physicians practising in Dublin who had studied in Leyden, Montpellier, and other continental medical schools, where they had the opportunities of acquiring a knowledge of practical anatomy. There were surgeons, too, who had been educated abroad, especially in Paris. Those persons were capable of teaching anatomy, and no doubt they did so in private.

The Company of Barber-Surgeons do not seem to have instituted any systematic courses of lectures on anatomy or surgery. The London fraternity, from an early period, made some show of educational zeal. Early in the seventeenth century Dr. Gwyn delivered before them systematic courses of lectures on anatomy and surgery. In 1634 Dr. Alexander Read commenced to lecture before the Company, and continued to do so for many years. His lectures were published in a collected form in 1750, and we learn from them that by a law of the Barber-Surgeons' Company their lecturer on surgery and anatomy should be a doctor of physic.

The Dublin Barber-Chirurgeons' Guild made some pretence to be an examining body, but the education of apprentices they left altogether in the hands of their masters. That many members of the Company never learned the most elementary anatomy is evident from the fact that some of them were quite illiterate, even so late as the close of the seventeenth century. A man unable to write was unlikely to have studied anatomy.

About the middle of the eighteenth century there seems to have been some anatomical work going on in Dublin, as the robbery of bodies for dissection purposes were of frequent occurrence. In May, 1732, the gravedigger of St. Andrew's chuchyard was committed to prison for having aided in stealing bodies from that cemetery. The following advertisement appeared in Faulkner's *Dublin Journal* for December, 1742:—

"St. Andrew's Parish, Dublin.

"*Dec.* 21*st*, 1742.

"Whereas we are informed that Richard Fox, late gravedigger, with the assistance of several other persons unknown, hath barbarously, in-

humanly, and wickedly opened the grave of a gentleman who was buried in the churchyard of the said parish, and took away his body, to the great grief and trouble of his friends. We, therefore, the minister, churchwardens, and parishioners, in vestry assembled, whereof due notice was given in church on the Lord's day next preceding the date hereof, are come to the following resolutions:—Resolved—That the said R. F. and his accomplices be prosecuted with the utmost severity of the law. Resolved—That the prosecution be carried on at the expense of the parish. Resolved—That all sums of money laid out and expended by the said churchwardens, or any other person or persons employed by them on such prosecution, be allowed by this parish in the churchwardens' accounts. Resolved—That, if it be thought convenient to carry on any prosecution against any other person or persons for taking away any other corp or corps out of the church or churchyard of this parish, any time within these six months past, the prosecution shall be carried on, one-half at the expense of the Rev. Dr. Bradford, vicar, the other at the expense of the parish, to which the said D. B. hath agreed. Resolved that the above resolution be made public. Signed by order.—James Fetherston, Vestry Clerk.

"The above R. F. was employed by the sexton of the said parish as gravedigger, and having made his escape from justice, we, the churchwardens, do promise to pay to any person that shall apprehend the said Fox and bring him to justice, £2 5s. 6d. N.B.—The said Fox is blind of one eye, a tall thin young man, wore a blue coat and pewter buttons.

"James Lane,
"Joseph Cope, } Churchwardens.

"N.B.—£3 3s. more reward will be given."

In 1711[a] the first anatomical hall and chemical laboratory were established in Trinity College, close to the Library. Anatomy was taught in this building for a century and a quarter.

Robert Hoyle was the first anatomical lecturer in Trinity College. He was succeeded by Bryan Robinson, an eminent *physician*, but he was in turn displaced by Hoyle. The latter was succeeded by Francis Madden, Thomas Foreside (a physician), Robert Robinson, M.D.; George Cleghorn, James Cleghorn, and William Hartigan.

George Cleghorn's teaching of anatomy in Trinity College appears to have been a success. Frederick Jebb, writing in 1770, says:—"Dr. Cleghorn's accuracy and laborious application to anatomical instruction begin to diffuse their influence." Cleghorn's

[a] Taylor, in his History of the University, states that the anatomy theatre was built in 1705 and taken down in 1835. It is certain that the first stone of the present medical school in the College Park was laid July 14, 1823.

pupils became anatomical teachers not only in Dublin but also in the provinces, if we may judge by the following curious advertisement, which appeared in the *Dublin Journal* for July 28th, 1767:—

"Mr. Maxwell,[a] Surgeon of the Tyrone Hospital, being solicited by many of his friends to establish in this county an anatomical school for instruction of young gentlemen of the profession, and as he has served his apprenticeship to Mr. Cleghorn, Professor of Anatomy in Trinity College, Dublin, and also attended his anatomical lectures for seven years, willing to render himself as useful to society as his abilities will allow, intends on Monday, 14th Dec., at 2 o'clock, to begin, at his house at Omagh, a course of lectures on anatomy and surgery, with some practical observations in midwifery, on the following terms, viz:—For attending his lectures on anatomy, three guineas; dissecting pupils provided with subjects, six guineas; for attending his lectures in general and the practise of the hospital, and taught to dissect and to perform all the different operations in surgery, twelve guineas per annum. Such pupils as choose to come under Mr. Maxwell's more private tuition may be provided with diet and lodging in his own house at fifteen guineas per annum. To those Mr. Maxwell (considering that in order to make them good surgeons it is absolutely necessary to give them a knowledge in Physick, and as he has attended for many years the Professors of the different branches of Medicine in Trinity College, and also the Practise of Physick for a considerable time at Mercer's Hospital, under Doctor Francis Hutcheson, Professor of Chemistry) therefore intends explaining Boerhaave's Aphorisms, and reading to them a course of lectures on the Practise of Physick. Two apprentices are wanted."

The reference in Gilborne's curious poetical book, published in 1775, to Hallahan's methods of preparing subjects for dissection shows that the teaching of anatomy was not confined to Trinity College. He says:—

> "John Hallahan our just esteem deserves,
> His curious Art dead bodies long preserves
> Entire and sound, like monuments of brass;
> Embalm'd Ægyptian mummies they surpass—
> Surpass the Labours of the famous Ruysch:[b]
> He does injections to perfection push."

[a] Probably the Henry Maxwell who, in 1768, was "passed" as candidate for the surgeoncy of the County Tyrone Infirmary by the County Infirmaries Surgical Board.

[b] Frederick Ruysch, a celebrated Dutch anatomist, author of Opera Omnia Anatomico-Medico-Chirurgica, published in four volumes at Amsterdam in 1717 and succeeding years.

Hallahan subsequently became a Professor in the College of Surgeons' School, but he never was connected with Trinity College. Some of the founders of the College of Surgeons, who had not studied either in Trinity College or out of Ireland, were good anatomists, and therefore must have received private instruction in dissections from the surgeons to whom they had served their apprenticeship. About the time of the foundation of the College of Surgeons the Anatomical Class in Trinity College did not muster a score. In 1797 only one person graduated in Medicine in Dublin University. These facts, and the prevalence of robbing the graves towards the close of the century, prove apparently that private dissections were extensively carried on in Dublin about that time.

In 1784 the Royal College of Surgeons in Ireland were founded, and in the same year they enacted the following by-law:—"That for the better advancement of the profession, it shall be lawful for the College to elect or appoint a Professor or Professors, who shall annually give a regular course or courses of lectures on anatomy, physiology, the practice and operation of surgery and midwifery; and that all apprentices or pupils to the members of the College, whose names shall be duly registered as hereinafter set forth, may attend the said course or courses *gratis*."

It was also resolved to examine candidates for the Letters Testimonial of the College, on two days, in anatomy, physiology, surgery, and surgical pharmacy. The School of the College was not completely established until 1790, and until that year the College were unable to receive the bodies of executed criminals for dissection, as would appear by the following correspondence:—

"Mr. Sheriff Tweedy presents his compliments to Surgeon Henthorn. He waited on him as secretary to the College of Surgeons of Ireland in order to deliver to him the body of Frederick Lambert for dissection, pursuant to the Act of Parliament. Mr. Tweedy will be thankful for Mr. Henthorn's answer.

"30th October, 1788."

To which Mr. Henthorn replied:—

"Sir,—I this moment had the honour of receiving your note informing me that you were ready to deliver to me, as secretary to the Royal College of Surgeons, the body of Frederick Lambert, pursuant to Act of Parliament.

"I am to acquaint you that the College regret it is not in their

power to comply with the Act by receiving the body, as Government has not yet enabled them to procure an hall for public dissection.

"I have the honour, &c.,

"October 30th, 1788, "J. HENTHORN.
"3 o'clock."

About this time there were many really good surgeons in Dublin who had not studied abroad or in the University, but who, nevertheless, appear to have been good anatomists. I refer more especially to Hallahan, W. Dease, Croker-King, Bowes, Woodroffe, Hartigan, O'Bré, Boyton, L'Estrange, Richards, and Wright. These men must have studied in private dissecting-rooms. Wright had a place of this kind in Longford-street, and, no doubt, the leading surgeons, who took many apprentices, carried on dissections in stables and other private places. Hartigan, Professor of Anatomy, first to the College of Surgeons and subsequently to Trinity College, had, before he was appointed to the first of these offices, a private dissecting-room.

On the 4th of Nov., 1816, the Irish College of Surgeons addressed a remonstrance to Sir Robt. Peel, in reference to a Bill before the House of Commons, the provisions of which appeared to entrench upon the privileges of the College. The particular provision to which special objection was made was that which permitted the diplomates of the London, Dublin, and Edinburgh Colleges of Surgeons to practise or hold appointments in any part of the United Kingdom. It must be admitted that at this period the examinations at the Irish College were superior to those at the sister Colleges. The London Institution required the candidate for their diploma to produce certificates of only two courses of lectures on anatomy and surgery (which might be attended within the space of one year), and of one year's attendance at hospital. The candidate might, so far as a liberal education was concerned, be almost illiterate. At this period, and for a quarter of a century later, the lowest types of Irish students sought in the London College the diploma which they and their teachers well knew could not by such imperfectly taught or unintelligent persons be obtained at home. Sir Astley Cooper relates the following anecdote of an Irish candidate before the Examining Board of the London College:—"What is a simple and what is a compound fracture?" asked the examiner. The reply was—"A simple fracture is when a bone is broke, and a compound fracture when it's all broke." Sir Astley asked what he meant by "all broke?"

"I mean," he replied, "broke into smithereens, to be sure." "I ventured to ask him what was 'smithereens.' He turned upon me with an intense expression of sympathy upon his countenance, 'You don't know what is smithereens? Then I give you up!'"

On the 2nd March, 1818, the Irish College of Surgeons presented a petition to Parliament against a Bill for regulating the medical profession, then before the Legislature. The College approved the Bill so far as it prohibited medical practice for lucre by unlicensed persons, and also the proposal to enable all regularly educated surgeons to practise in all parts of the United Kingdom; but they complained of the injustice of restricting the candidates for examination by the Irish College to apprentices who had served at least five years, whilst no such restriction was imposed upon the London and Edinburgh Colleges. It was averred that there were at that time residing in Ireland persons possessing the diploma of the London College who, before receiving it, had never seen practice in a public hospital, and whose professional education extended over a period not exceeding eighteen months. The wording of the petition—a lengthy document—shows that the College did not wish to be placed in the position occupied by the sister Colleges, but, on the contrary, desired that all candidates for surgical qualifications should be obliged to study their profession during a reasonably long period.

In 1829 a candidate for the Letters Testimonial of the Irish College of Surgeons had to produce certificates showing that he had been engaged in professional study in a hospital and school of medicine or surgery for a full term of six years. He had to lodge certificates of attendance at a surgical hospital—containing at least fifty beds—during five sessions of six months, or three entire years, and of attendance at three courses on anatomy, three on surgery, two on chemistry, one on materia medica, one on medicine, and one on midwifery, and a certificate showing that he had dissected during three Winter Sessions. Shortly afterwards a certificate of attendance on a course of lectures on medical jurisprudence was required.

All candidates had to pass the examination in general education before presenting themselves for the professional examination. The entrance examination to Trinity College, Dublin, was taken as an equivalent to the College examination, but it is not now accepted as such. The candidate was liable to be called upon to operate on the dead body. He was expected to read a thesis in Latin or English upon a professional subject, or to describe a series of cases which he

had observed in hospital, with his observations thereon. Three of the candidate's years of professional study had to be passed in Dublin, London, Edinburgh, or Glasgow. The examination fee was—for registered apprentices, thirty guineas; for non-apprentices, sixty guineas. The fees for registering were twenty guineas. Rejected candidates were ineligible for re-examination until one year after their rejection. The examiners were unpaid, though many of them attended examinations more than eighty times in one year, and if absent or late, without sufficient cause, were fined.

In 1830 the educational curriculum could be compared favourably with that of any other licensing medical body in Europe. This College was the only surgical one who submitted their candidates to an examination in the classics. They now required proof of a knowledge of medicine, chemistry, and medical jurisprudence, so that the diplomates could with truth aver that they had been subjected to an examination in which their knowledge of medical science, as well as the mechanical treatment of disease, had been tested. It cannot be denied that the diplomas of the Irish College were held in high estimation about this time. That the strictness of the examination of candidates for them was in harmony with the extensive curriculum of education imposed by the College may be inferred from the fact that large percentages of the candidates were rejected. The rejection of a large proportion of candidates, who had studied for three years or so, is what might be expected, but those who presented themselves in the Examination Hall in Stephen's-green were not raw lads, but were men who had spent six or seven years in the study of their profession. The records of the Court of Examiners for the years 1819, 1822, and 1823, cannot be found, but, excluding those years, I find that during the period 1815-1833, 380 candidates for Letters Testimonial were examined, of whom fifty-four were rejected.

About fifty years ago anatomical studies were prosecuted in the Dublin Schools with great ardour and success. The teachers were men whose names are imperishably associated with the annals of surgery and anatomy in this country. Macartney taught at the University; Dease, Todd, Colles, Wilmot, and Jacob at the College; Kirby, Ellis, Hayden, Brennan, Bevan, and Butcher at the two Schools in Peter-street; O'Ferrall at the old Richmond School; Hargrave in the Digges-street School; Cusack, Porter, Houston, Hart, Corbet, and Carlisle at Park-street School; Carmichael, M'Dowel, Adams, M'Donnell, Flood, Mayne, and Power at the

Richmond School; E. Stoker and S. M'Coy at Eccles-street School and Mark-street School; Wallace at Moore-street School; White at Ormond-quay School; Benjamin Alcock in Cecilia-street School; and Hillis and Irvine at the Marlborough-street School.

For many years anatomy and surgery were taught by the same person, and this was the case in some of the Schools so late as 1830. The teacher knew exactly the kind of anatomical knowledge necessary for the proper performance of surgical operations, and that kind of anatomy he taught with a thoroughness which probably was not exceeded in the schools of any other city. The kind of anatomy termed minute or transcendental received, no doubt, scant attention in the Dublin Schools half a century ago; but the object of the teacher was the education of surgeons, not the advancement of anatomical science. It is nevertheless to be regretted that so few of the many accomplished anatomists in Dublin during the first half of the century devoted themselves to original research. Had the reverse been the case, the Dublin School might have contributed as brilliantly to anatomical science as it did to the art of surgery and the practice of physic.

At this time willing tribute was paid to the merit of the Irish School of Surgery. When Sir Benjamin C. Brodie, Bart., was examined, in 1828, before the Select Committee of the House of Commons on anatomy, he said, speaking of the Dublin students:— "I believe the majority of them are better anatomists than the English students." When Sir Astley Cooper, Bart., Serjeant-Surgeon to the King, was examined before the Select Committee of the House of Commons on medical education, he said:— "There is a galaxy of talent in the profession in Dublin. I do not know of any town inferior in size to London in which there is a greater combination of talent than in Dublin." Mr. George J. Guthrie, the well-known army surgeon, President of the London College of Surgeons in 1834, was examined before this Committee. He was asked what he thought as to the desirability of his College following the example of the Dublin College, by permitting qualified persons to be present at the examinations. In reply, he expressed his belief that it would not be desirable, because, he said, the Dublin candidates were "under very different circumstances with respect to age and education." When asked did he mean that the Dublin candidates were "older and better educated," he replied, "Yes." Dr. James Somerville, Inspector of Anatomy, was examined, and having been asked a question respecting the late Surgeon James

Richard Bennett, he said:—"Mr. Bennett was a distinguished anatomist, as, I may say, generally all members of the Dublin College of Surgeons are."

The Mr. J. R. Bennett to whom Dr. Somerville referred studied from 1815 till 1820 at the College of Surgeons and the Richmond Hospital, and he took the diploma of the College in 1820. A small property which Mr. Bennett[a] possessed he relinquished in favour of his family, and in 1822 proceeded to Paris. In that city he studied for some time under such teachers as Dupuytren and Laennec, and then became a teacher himself. About that period the number of British medical students in Paris was close on 200. Bennett's private classes in anatomy were conducted in apartments in the anatomical school at the Hospital *La Pitié*. Their success became so great as to excite the jealousy of the French students and perhaps teachers. Representations were made to the Government that there was a scarcity of subjects at *La Pitié* School, and that Bennett caused the scarcity. Bennett's means of teaching were seriously interfered with, and he applied for protection to the British ambassador, who referred to his Government for instructions. Getting no redress, he proceeded to London, and submitted his case to Mr. Canning, then Foreign Secretary. Mr. Canning asked the opinion of the London College of Surgeons upon it, and received from that body an adverse one. This act of illiberality was no doubt prompted by the desire of the College to see British students studying in London rather than in Paris. They were unwilling to encourage such men as Bennett to attract his countrymen to the schools of Paris. The subsequent conduct of the College towards Bennett did not atone for their action in reference to the Paris affair. When he settled in London as a private anatomical teacher they refused to recognise his lectures, on the ground that he was not connected with an hospital, although Dr. Somerville states that he was "the most successful teacher of anatomy he ever knew." The injustice done to Bennett was the more inexcusable from the fact that the College had previously recognised the lectures of non-hospital teachers. Since those days the London College, like many other public bodies, have become more liberal and enlightened, and at present no surgical qualification is more highly valued than the M.R.C.S.

I have referred to Mr. Bennett's interesting and unfortunate case, firstly, because it relates to a curious phase in the history of anatomical

[a] Professor Bennett, our worthy late President, is his near relative.

teaching; secondly, because Bennett may be regarded as the type of the Irish anatomist produced during the most brilliant epoch of the Irish School of Medicine.

The *Edinburgh Medical Journal*, referring in 1837 to proposed medical legislation, said:—"The Royal College of Surgeons in Dublin is, perhaps, the most enlightened surgical incorporation in Europe, and requires from its members a greater range of accurate knowledge than any other body, excepting the Medical Faculty of the University of Edinburgh."

Up to 1828 the only and exclusive credentials which a registered pupil of the College of Surgeons required when presenting himself for examination were his indentures. In that year a new Charter permitted the examination of candidates who were not apprentices, on the production of certain specified evidence of study. In 1844 the Supplemental Charter abolished the apprenticeship qualification. I find from the records of the College that it was quite common for candidates to present certificates showing that they had attended during five and even six winter sessions practical anatomy. When the Charter of 1844 was granted it was found necessary to lower the standard of examination, so far as the examination for Letters Testimonial was concerned. The higher grade of Member, or, as it was termed in the new Charter, Fellow, was, from the foundation of the College up to 1844, an elective one; but in the new Charter it was provided that it could be conferred only after examination. There were thus two examinations open to students—that for the Fellowship, in which the strictness of the old examinations of the College were presumably retained, and the lower grade of Licentiate, in which the standard of examination was lowered. These historic facts should be borne in mind, for at this time an opinion prevails in some quarters that the Fellowship ought to be conferred, after a nominal examination, upon the Licentiates of a certain time standing. If this idea were carried into effect it would be nearly a reversion to the old principle of electing the Fellows.

I have demonstrated to a certainty that the Irish surgeons from the latter part of the last century were good anatomists; but I admit that they were much less distinguished for their discoveries in anatomy than for their skill and originality as surgeons. When, however, we consider that they were not very numerous, and also that the list of anatomical discoveries made in England is neither very long nor important, the original anatomical work done in Ireland is deserving of some measure of praise.

Silvester O'Halloran, of Limerick, was undoubtedly the ablest Irish anatomist and one of the best surgeons of the last century. His writings on the surgery of the eye are very learned. He shows that Petit was not, as generally believed, the first to extract an opaque crystalline, that operation having been described by an Arabian physician, Jesus Hali Arculanus, and other ancient authors. His method for an operation for removal of a cataract was admitted to be one of the best, if not *the* best. He invented a knife, intended to supersede the scissors of Davièl, at that time in great repute with oculists, but open to many objections. The instrument was doubled and slightly concave on the flat side of the blade. He says—"With the concave part next me I pierce the sclerotica, very near the edge of the cornea—suppose the third of a line—at either the internal or external canthus, according to the eye to be operated." His method of operating in glaucoma was considered remarkably good when it was proposed, though some of the anatomical and physiological discoveries to which he laid claim hava not been conceded to him by more recent writers. His practice as an oculist was considerable. O'Halloran was the first writer who demonstrated that trephining was unnecessary in certain cases of depression of the bone. He had unusually favourable opportunities of studying cranial fractures, for in his time Whiteboyism and faction-fighting flourished, and contributed scores of cracked crowns to the Limerick Infirmary. He was the first to perform amputation of the thigh by a long anterior flap, and a short posterior one, formed by a circular division of the soft structures. In 1848 this method was revived in France by MM. Sédillot and Baudens, and in England—but in a modified form—by Spence and Teale. O'Halloran allowed the wound to remain open for drainage for some days, a practice which has recently been advocated.

Abraham Colles will always be remembered not merely for his famous description of the fracture which bears his name, but also as the first observer of three of the structures of the human body. Benjamin Alcock's observations on the non-ganglionic portion of the fifth pair of nerves are admitted to be original and important. He gave the best description of the femoral artery; and described the canal in which the pudic artery lies in the obturator fascia. Professor Macalister has paid an eloquent tribute to the originality of one of the greatest anatomists which Ireland has produced—the late James Macartney. He discovered the fibrous nature of the white matter of the brain and the connection between

the subcortical nerve fibre and the grey cerebral matter. His description of the vascular system of birds is unsurpassed. His account of luminous animals is of great interest. He was one of the first to describe accurately the mechanism of rumination, and he discovered numerous glandular appendages in the digestive organs of mammals, especially of rodents. William Henry Porter described the deep fascia in front of the trachea better than it had been done before. Hart did some good work in relation to the connections of the inferior laryngeal nerve. Corbet, of Cecilia-street School, described the deep fascia covering the brachial artery. Robert W. Smith has given us the best account of the reflections of the capsule of the hip (which had previously been noticed by Weitbrecht). Adams has elaborately described the relations of the common iliac arteries. The first good description of the costo-coracoid membrane is due to Valentine Flood. Greene did some original work in connection with arteries. A. Macalister is the great authority on muscular anomalies in man, and he has equalled, if he has not excelled, Macartney in the value and extent of his investigations in comparative anatomy.

The following is a list of the more important anatomical discoveries made in this country; but in a brief address such as this, to enter into details is neither possible nor desirable:—

ANATOMICAL DISCOVERIES IN IRELAND.

By Allen Mullen—Long ciliary vessels of the eye; anatomy of the elephant.

„ Sir Thomas Molyneux—Anatomy of the bat.

„ Silvester O'Halloran—Structure of the rudimental plica semilunaris.

„ Thomas Rutty—Distribution of arterial branches upon the anterior surface of the kidnye.

, Abraham Colles—(1) The triangular reflective ascending from the insertion of the external pillar of the external abdominal ring towards the linea alba, (2) the secondary insertion of Hey's ligament into the pectineal portion of the fascia lata, (3) the connection of the middle perineal fascia overlying the muscles of the perineum and continuous around the border of the transverse perineal muscle with the base of the triangular ligament.

By James Macartney—Numerous original observations in human and comparative anatomy.

„ John Hart—Anatomy of the fossil Irish deer.

„ Arthur Jacob—External layer of retina (Jacob's membrane); radiating fibres of the iris; first account of infra-orbital sinuses of deer, and of mammary gland of cetaceans.

„ Sir P. Crampton—Vascular ciliary apparatus of the eye of birds.

„ J. O'Beirne—Valves of the rectum.

„ R. Harrison—Anatomy of the elephant.

„ W. J. O'Ferrall—The bursa mucosa oculi (also discovered by Tenon).

„ R. Shekleton—The compressor venæ dorsalis penis (also more fully described by Houston).

„ John Houston—Valves of the rectum (description), original observations in comparative anatomy.

„ Valentine Flood—The superior intracapsular gleno-humeral ligament.

„ W. Hargrave—Anatomy and function of Meckel's ganglion.

„ Robert M'Donnell—Arteriolæ rectæ veræ of the kidney (simultaneously discovered by Virchow).

„ D. J. Cunningham—Nerve supply to musculus sternalis (also Bardeleben).

In conclusion, I avail myself of this opportunity to express my thanks to those who have placed me in the position which I now have the honour to occupy. To be the official head of so great a body as the Royal College of Surgeons, with four thousand members, and to become thereby President of this Section of the Academy of Medicine in Ireland, are honours of which it is pardonable to feel proud. If *laudari a laudato viro* be a great measure of praise, how much greater is it to hold, though it be but for a brief season, among you the rank of *primus inter pares!* Conscious as I am how greatly these honours exceed my deserts, I feel the more deeply sensible of what I cannot but regard as more of a personal than a professional compliment.

ART. XXII.—*The Hospitals of the House of Industry. A Historical Sketch.*[a] By WILLIAM THORNLEY STOKER, one of the Surgeons to the House.

TEN years have passed away, and I find myself once more the spokesman who is to bid you welcome to our wards, and say some words of introduction at the beginning of a new session. I wish that the duty had been laid upon another tongue, for I confess that there is no piece of self-abnegation to which I would have more readily consented than the imposition on some friend of a duty such as I now discharge, and the aphorism of Horace—

"Quanto quisque sibi pleura negaverit,
A Diis plura feret"—

is a piece of philosophy of which I have felt very ready to admit the wisdom and take the benefit in a matter like this.

It has occurred to me that, as one of the numerous Commissions which have from time to time been deputed to inquire into the grants to Dublin Hospitals is now sitting, we might spend a short time in profitable contemplation of a subject bearing on its investigations, and, therefore, of moment to us all. I refer to the history of these hospitals, which is one of great interest and variety; and although, in the bounds of your patience, I can give but a very brief outline of their birth, development, and offspring in the way of charity and education, I may succeed not only in telling what will inform you, but may offer an instructive example of the process of evolution by which these institutions have sprung from a kindred but different ancestry; and illustrate how, born either of the charity of the better part of man's nature, or begotten of that more selfish and philosophical desire to protect individuals from undue claim, which is one of the characters of a high social development, these hospitals have had their being and bear their fruit.

We are often asked whence these houses derive their names? The individual titles of Hardwicke, Richmond, and Whitworth were—following a rule at one time common, and to which such exception has been taken of late in cases we have all heard of—conferred on the buildings in question in the beginning of this century, when the respective godfathers under whose rule they were constructed were Viceroys of Ireland. If we seek for the

[a] Being the Introductory Lecture delivered in the Richmond Hospital on October 29, 1885.

origin of the collective name, House of Industry, we must go back to the time when George III. was king, to the year of grace 1772, when his respectable reign had lasted for twelve years, when a man called George Washington had arisen, when England was in the thick of the disputes which resulted in the Declaration of Independence in 1776, and here, four years older than the nationality of the United States, we find our inception in a law passed to relieve the poverty and vice dependent, no doubt, largely on the improvidence of the people and the profligacy of the gentry of that day.

The 11th & 12th Geo. III., passed in 1772, reciting "that strolling beggars are very numerous in Ireland, and that it is become equally necessary to give countenance and assistance to those poor who shall be found disabled by old age and infirmities to earn their living, as to restrain and punish those who may be able to support themselves by labour and industry, and yet may choose to live in idleness by begging," proceeds to erect corporations in every county, and in every county of a city, and in every county of a town in Ireland for carrying the above purposes into effect.

The Act empowers such corporations to grant to such helpless poor as have resided one year within their respective counties, badges and licences to beg in certain districts, and for limited periods.

It further requires them, when possessed of sufficient funds for the purpose, to build hospitals in their respective counties, to be called "Workhouses," or "HOUSES OF INDUSTRY," such workhouses to be divided into four parts:—

1st.—For such poor helpless men as shall be judged worthy of admission.

2nd.—For such poor helpless women as shall be judged worthy of admission.

3rd.—For the reception of men who shall be committed to the hospital as vagabonds or sturdy beggars.

4th.—For such idle, strolling, and disorderly women as shall be committed to the hospital, and found able for labour.

The Act provides for the punishment of vagrants who beg without a licence, empowers justices of the peace to dispose of the children of persons applying for badges, either by causing them to be apprenticed in the manner pointed out in the Act, or by placing them under the care of the Incorporated Society.

Corporations are required to seize strolling vagrants and commit

them to the Houses of Industry, to be kept at hard labour for periods varying from two months to four years, and to inflict corporal punishment in cases of ill conduct.

The Grand Juries are authorised to present annually for certain sums to be paid to the corporations, in order to create revenue, but voluntary subscriptions were evidently looked forward to as the principal means for carrying out the purposes of the Act.

We have here the first attempt to frame a thoughtful and humane measure for dealing with the pauper classes, and one which, with some modification, remained in force until, in 1838, Sir Robert Peel passed the great Poor Law Act, which is at work in the present day.

By virtue of this enactment the corporation for the relief of the poor in the City of Dublin was instituted in 1773, and seems to have had considerable success. Voluntary contributions flowed in largely for a time; and, according to Dr. Woodward, Bishop of Cloyne, who published in 1775 an Address to the Public, intended to revive their zeal on this subject, "the nuisance (of beggary), grievous beyond the experience of other great cities, and from its greatness esteemed to be beyond remedy, was actually suppressed." But this success was temporary. Contributions fell off, and in 1777 the Parliament of Ireland made a grant of £4,000 towards the maintenance of the House of Industry in Dublin; and from that time it has flourished on the parliamentary grants, which have been continued every session.

The Act had not a corresponding measure of success in other places, as is seen from the records of the early part of the century, which show also that persons were received from all parts of Ireland into the Dublin House of Industry. This might be expected, when we remember that for the first twenty-eight years of its existence our House was situated in a metropolis possessing a Parliament and resident aristocracy of its own.

The social and economic story of this institution, even in its earlier days, is very plainly written in the numerous Acts of Parliament and Commissions which have dealt with it since 1772, as—owing doubtless to its connexion, until 1838, with the vexed subject of pauper relief—we have a full record of its changes, expenditure, and work.

The most important Commissions which have dealt with the condition of these hospitals, and have been most instrumental in effecting changes, have been those of 1808, 1830, and 1856.

From the names of the persons who presided over them, we may call the first La Touche's and the second Renny's. The last is generally known as South's, from the eminent London surgeon who took the leading part in it.

The history of the House of Industry readily divides itself into three periods:—

1st.—From the passing of the Houses of Industry Act in 1772 to Sir Robert Peel's Poor Law Act of 1838, when the Workhouse proper was separated from the Infirmary.

2nd.—From that date to 1856, when, on the recommendation of South's Commission, an Act was passed for the better regulation of those Dublin Hospitals receiving parliamentary grants, by which the annual subsidy was fixed; and

3rd.—From 1856 to the present year.

During the first and second of these periods the supply of public money to the House of Industry in Dublin was practically unlimited. There is little doubt that about 1777 all voluntary subscriptions had ceased, and that, commencing with the £4,000 then granted by Parliament, its annual allowance rose with the increase of the numbers it received, to a much larger sum. In 1808 La Touche's Commission, in a Report upon the charitable institutions of Dublin receiving aid from Parliament, gave the total revenue for the preceding year as £29,984 18s. 10d., of which £22,177 was contributed by grant and £2,720 8s. 6d. was produced by the labour of the inmates. Again, in 1830, the Commission headed by George Renny, Esq., gave the total charge for the past year as £26,099 1s. 9d., of which £22,998 9s. 2d. was received from the Treasury, and, alas for the decaying industry of the House, the net profit on the labour of the poor reached only the meagre sum of £87 2s. 5d. ! !

In the last year of our unseparated condition under the old law we drew an income of £20,772 16s. 2d., and in 1840–1, or the first year of the working of the present Poor Act, the sum allowed for the hospitals was £18,373 14s. 9½d. After this the grants, which were given on an estimate formed at the end of each year, became steadily reduced, the decline being very gradual, owing to the cost of the lunatic establishment, which only diminished in size by the death of its inmates. The average grant, for example, in each of the five years preceding 1856 was £11,719 12s. 0d., and in that year South's Commission recommended Parliament to fix our annual allowance at £7,600, at which sum it has since stood,

to the apparent discomfort of some of our friends, who not satisfied with their own piece of good meat want our poor bone.

Up to the passing of Peel's Act this place was a mixture of workhouse, penitentiary, and hospital, and we then enter on the second period of our history, that in which, by the provisions of this great enactment, the hospital proper was separated from the workhouse, and the punishment of the impenitent left to another branch of the law.

A study of the conditions of the House of Industry during the period from 1772 to 1838 opens a chapter in human history that cannot fail to interest and instruct. Think of a seething mass of young and old, of poor and wicked, of sane and mad—for lunatics were received almost from the first—bubbling together in this huge caldron. No separation of age, or sex, or kind; the attempt to observe the original provision of the Act on these points being so slight, that in 1808 the Commission which then sat reported the difficulties in the way to be insurmountable until the plan of the buildings was completely altered. Think of men licensed to beg, and punished for going without a badge, just as recalcitrant cabmen would be at the present day! The system of licenses to beg was soon discontinued. It was found impracticable, and was no doubt, rebelled against by even the down-trodden poor of those days. From time to time attempts were made to improve this system of poor relief. A long series of Acts were passed, intended to improve the government and management of the charity; thus, in 1785, we find a measure to enable the Governors of the House of Industry to bind out the children under their care to Protestant tradesmen—a distinction very characteristic of the state of affairs in Ireland at that day.

From 1772 to 1796 the Dublin House of Industry was managed by the Corporation, constituted by the Act of Geo. III. In 1797 the Corporation was empowered to elect seven Governors from its own body to have the sole ordering of the establishment; and in 1800 the number was reduced, for greater convenience, to five.

In 1820 a Governor at a salary of £500, and an Assistant-Governor were appointed, subject to the control of a Board of seven visitors, and this arrangement remained in force, with no significant alteration, until, following South's Commission in 1856, the present system of government by a Board of gentlemen appointed by the Lord Lieutenant was instituted by the Dublin Hospitals Act of that date. The number of Governors appointed

was eleven, and although full power exists to increase the size of the Board it has remained the same.

The development of hospital accommodation in the House of Industry has been very gradual, and, if I might use a biological illustration, may be said to instance an erratic departure from physiological propriety; for while, at first, a process of what we may call endogenous formation went on, we finally find the Infirmary, in 1838, separated from the workhouse by a distinct process of gemmation. In 1774 two wards were set apart for medical and surgical patients, and placed in charge of two physicians and two surgeons. In 1790 a third physician and a third surgeon, together with a consultant in each branch, were appointed. In 1776 ten cells for lunatics—I was not thinking of this when I spoke of endogenous formation—were fitted up, and in 1778 a separate house with wooden stalls, on the site occupied until lately by the Carmichael School, was built for the accommodation of 109 of this unfortunate class, who at that day were treated like a mixture of criminal and wild beast. In 1840 an additional lunatic department was opened in what is now the Island Bridge Barracks; and in 1857 we see the last of our lunatic department, which having been relieved of pressure by the foundation of the Richmond Lunatic Asylum in 1830, was closed, and the greater number of the inmates transferred for the remainder of their lives to Lucan, where they were placed under the care of the late Dr. Stewart, formerly the Governor of the old House of Industry.

In 1798 the Bedford Asylum for Children was opened, which in 1807 had grown so as to accommodate over 600 inmates, who earned in that year £1,287 16s. 7d. In 1801 a Penitentiary for male criminals under the age of fifteen was instituted by Earl Hardwicke, and in 1808 had dealt, in a somewhat unsatisfactory way, with 241 boys.

As time wore on the want of special hospital accommodation was felt, and, fever being rife in the city in 1803, the first of our buildings as they now stand, the Hardwicke Hospital—which then held 64 beds, and now contains 120—was opened; and from 1826 to 1830 it was supplemented by a disused convent, which, to meet the calls of an epidemic, was hired and named the Wellesley Hospital. It stood in King-street, near St. Paul's Church, and held 133 patients.

In 1808 La Touche's Commission reported so unfavourably of

the surgical accommodation of the House of Industry that an old convent, built about 1674, was purchased and opened as the present Richmond Hospital in 1811. It is a remarkable coincidence that two of our buildings were originally conventual establishments; and evidence of the former state of that which still remains to us may be seen in the western ward of the Richmond Hospital, which, with the portion of the ground floor beneath it now devoted to dispensary accommodation, was the convent chapel, the long windows of which may yet be seen, although they now divide their length between two stories of the building. The Surgical Hospital originally contained 112 beds, as it now does, but its condition must have been such as would startle a modern sanitarian. It had five stories:—

The basement,	-	8 ft. 8 in. high,
1st floor,	-	10 ft. „
2nd „	-	10 ft. „
3rd „	-	8 ft. „
4th „	-	7 ft. 8 in. „

In 1811 the operating theatre was built. It was then surrounded by a gallery, in which preparations and books were kept until 1837, when the present Museum was constructed, and the books and their cases removed to the chamber now used as a consulting room. The Museum has since 1837 grown to its present importance, and the evidence given before the Committee of the House of Commons in 1855 by Dr.—afterwards Sir Dominic—Corrigan and others as to the number and value of the preparations contained in it, and its fame abroad, is only untrue in falling short of the facts of to-day, as since then much time and money have been expended on it. Corrigan, just thirty years ago, said:—"These hospitals contain within them a museum which is unrivalled in Ireland, certainly, for its extent and importance." He gives reasons for his statement, and goes on to say that it contained 1,000 drawings and 2,500 preparations, all of cases that had occurred within the hospital practice, and that no other Dublin hospital had anything like it.

In 1829 the Chief Secretary, Lord Francis Leveson Gower, in writing to appoint Renny's Commission, said—"You are probably aware that the Richmond Surgical Hospital is in a state which will render its demolition necessary at no distant period. Funds were last year voted by Parliament for the reconstruction of that establishment, and are now at the disposal of the Lord Lieutenant.

His Grace, however, has reason to believe that by a judicious appropriation of buildings not fully occupied at present, and attached to the House of Industry—viz., the Chronic and Fever Hospitals, this heavy expense may be spared to the public; and the objects of humanity, and the promotion of medical and surgical science, which have hitherto been attained by the Richmond Surgical Hospital, fully secured."

Unfortunately the more economic counsel prevailed, the house was not rebuilt, and the result of the recommendation of the Commission was that, at a cost of about £1,600, the two upper stories were taken off the Richmond Hospital and certain structural alterations made. Seven years later another recommendation of the same Commission was carried into effect, and the new Talbot Dispensary constructed at a charge of £1,098. It was built to take the place of a previous and smaller dispensary which had been opened in 1807, a moment when the physicians—who in that day were a very aristocratic race, who walked slowly, carried gold-headed canes, and would not condescend to any of the meaner offices performed by surgeons—showed none of the energy displayed by our medical colleagues in later times. They refused to participate in its administration, which, therefore, was undertaken by the surgeons. The Talbot Dispensary was closed in 1857, and converted into the administrative block in which the Registrar now resides. The present dispensary was built in 1872, for, although at this date poor-law dispensaries were abundant in Dublin, it was found that for the better selection of cases, for educational purposes, and for other reasons, a dispensary was a useful, if not a necessary, adjunct to an hospital.

The next epoch in our clinical history is the building of the Whitworth Hospital, which was opened in 1817, and for the first two years of its existence was used to supplement our fever accommodation during an epidemic. At the end of that period it was put to its proper purpose of receiving medical cases other than those of fever. It had always the same number of beds, 82, that it contains to-day, and in its youth was frequently called the Chronic Hospital.

We have thus seen how a great infirmary, composed of three separate buildings for the reception respectively of medical, surgical, and fever cases, came to spring from a system of pauper relief. how special departments grew out of the necessities of the inmates, how some of these departments gradually died out, and

how eventually the accommodation for the sick separated in 1838 from the purely pauper part of the house, the former retaining the ancient name—House of Industry, while the latter became the South Dublin Union. At the present day all the buildings of the old house, except the hospitals, are incorporated in this Union, which has a more respectable air of age in parts of its interior than you would surmise from an outside view of its barrack-like wings.

The numbers of persons received into the House of Industry has, of course, varied enormously from time to time, the most constant figures being those presented by the occupants of the twenty-four mendicant cells, which existed up to the time of Peel's Act, and which were used by from 2,500 to 4,000 beggars every year.

In 1807, the year preceding La Touche's Commission, the number of inmates accommodated in the entire establishment was 6,145, of whom the large total of 796, or 12·94 per cent., died. The Report quaintly remarks, in a sense evidently explanatory rather than apologetic, that "of the above number *only* 280 died in the hospitals belonging to the establishment;" and as the number admitted to the hospitals in that year was 1,896, we find a percentage of 15·33 deaths as a sufficient comment on the sanitation of those days. At that time the hospital accommodation was so insufficient that the sick, the healthy, the insane, and the criminal were mixed in the same wards and often in the same beds. In an account of the several wards we find—

In No. 18, 48 females in 24 single beds, *all lunatics*,
„ 16, 42 males in 27 beds,
„ 15, 50 „ 25 „
„ 13, 50 women, *each nursing her own child*, occupying 25 beds,

and yet we are told the house was not crowded at the time!

Here is a picture of misery that provokes our smile before we have time to think of its sorrow. Remember it, all you who sleep soft, and thank God that the curtain of time has fallen over it, and that such things have passed away from our land.

We now pass from the state of affairs in 1808, to that in 1829, when the next commission sat. The establishment had a total accommodation for 2,086 persons, and admitted during the year 6,432, of whom 427, or 6·63 per cent. died, or only half the percentage of 1807, showing how sanitation was developing. The

deaths in the hospital portions of the house at this period also bear favourable comparison with the percentage of 1807. We find the—

Hardwicke admitting 1,997, with 143, or 7·16 per cent. deaths
Whitworth „ 907 „ 142, or 15·65 „
Richmond „ 1,105 „ 46, or 4·16 „

or a total death-rate of 8·25 per cent., to contrast with the "*only*" 15·33 of 1807, and to argue for the advantage gained by the better separation of cases, which had resulted from the efforts of La Touche's Commission.

Since South's Commission fixed our annual grant—and fixed it at a sum relatively, as well as absolutely, much less than we had before received—it has been a natural consequence that we should treat a smaller number of cases annually. The prices of provisions and most of the necessaries for the sick are higher than they were 29 years ago; our buildings being old have required a large share of our income to be expended on their repairs; besides science has made the treatment of disease, particularly of surgical affections, more costly if more successful. We therefore find that we relieved in—

1865, 3,290 cases indoors; mortality 6·23, and 10,314 outdoors,
1875, 2,674 „ „ 9·07, „ 25,219 „
1885, 1,998 „ „ 8·80, „ 21,368 „

showing that our grant requires to be increased instead of diminished, and that, as was said at the time, South's Commission was influenced by the evidence of a gentleman well known for his near views on questions of finance, to recommend a sum too much in keeping with his narrow outlook.

These are large results and small death-rates, and appear even more favourable if contrasted with other hospitals, when it is remembered that at least one-third of our cases are fever, and that the chief mortality occurs in the Hardwicke Hospital. For instance, the mortality in the Richmond Hospital at the three periods I have just named was only—

1·89 . . . in 1865,
3·63 . . . in 1875,
4·10 . . . in 1885,

a surprisingly low percentage when we remember the number of capital operations performed here, and how much we want in the way of improvements. But, with all our wants, we can show unsurpassed if not unequalled results.

Compare our mortality with that of the leading hospitals in another large town, subtracting fever cases, so as to make the comparison accurate, and you find in the period from 1870 to 1875, in—

Guy's Hospital,	deaths,	=	9·5 per cent.
St. Thomas's Hospital	,,	=	12·13 ,,
Middlesex Hospital	,,	=	12·92 ,,
Richmond and Whitworth	,,	=	5·48 ,,

Again, in the London hospitals the average mortality from amputations during the same period varied from 26·7 to 54·7 per cent.; in the Richmond it is about 6·6 per cent.

We extend another special advantage in this establishment to the sick poor; we are enabled by our grant to keep a much larger number of beds open in the summer months than other institutions in Dublin, and to relieve persons who cannot find admission elsewhere. Any of you who have served as clinical clerks here, know how sick people are sent to us from other hospitals at a time when their own wards are closed. It may be argued that a distribution of our grant would enable them to keep their beds occupied. I say, no; by concentrating the money in one institution you enable it to do that which attempted in a number would result in a want of economy and frittering away of income. The number of persons seeking admission is too reduced in the hot months to necessitate all the hospitals keeping all their wards open, and the demand is well met by enabling one establishment to do so.

One of our strongest claims to support is the situation of these hospitals and the character of the district they minister to. Dr. Jacob, whose ability as a statistician you are familiar with, has prepared a statement exhibiting this which is worthy of attention. It is to the effect that the House of Industry and Steevens' Hospitals supply medical aid to a district of nearly a square mile (502 acres), and estimated to contain a population of 58,390 persons—nearly one-fourth of the population of the city of Dublin.

This district, which may be called the West Dublin District, is the poorest and most densely populated part of Dublin, and being chiefly occupied by breweries, distilleries, and other factories and large warehouses, it is the chief accident centre of Dublin.

Taking the Metal Bridge as about the centre of Dublin, and calculating from the population of the registration districts, he finds that the West Dublin District contains 147 persons to the acre, or 12·18 persons to each house.

The following table shows the density of population of the various districts and the hospital supply of each :—

	Hospital	Acre Population	House Population
1. West Dublin, - -	House of Industry, Steevens', partly Adelaide.	147	12·18
2. No. 2. North and South,	Jervis-street Mercer's Adelaide.	147	12·18
3. No. 3, South,] - -	Adelaide, Mercer's, Meath, St. Vincent's, National Children's.	102·2	10·12
4. No. 4, South, - -	St. Vincent's, City of Dublin, Sir P. Dun's.	65·6	9·62
5. No. 1, North, - -	Mater Misericordiæ, Jervis-street.	52·3	7·34

But the West Dublin District being the most densely crowded, is also the poorest district in Dublin.

Calculating from the City Ward Valuation made for taxation purposes, Dr. Jacob finds that the average yearly value per house of the West Dublin District is only £13 4s.

The following table shows the relative poverty of the districts served by hospitals :—

			Average Yearly Value per House £ s. d.
House of Industry and Steevens'	serve	Arran, Inns', Usher's, Merchants', and Wood Quay Wards.	13 4 0
Mater Misericordiæ	serves	Mountjoy, Rotunda, and Inns' Quay Wards.	19 2 0
Jervis-street	serves	North City, Inns' Quay, and part of Trinity.	26 13 0
Adelaide, Meath, and Mercer's	serve	Exchange, Mansion House, Fitzwilliam, Merchants' Quay.	27 17 0
St. Vincent's, Mercer's, City of Dublin, and Sir P. Dun's	serve	Trinity, Mansion House, South Dock, and Fitzwilliam Wards.	29 11 0

It is thus manifest—

1. That the district supplied by the House of Industry and Steevens' is the most necessitous and the most populous in Dublin.

2. That it is dependent for hospital relief—by its locality—on these hospitals.

3. That the district is not capable of supporting its hospitals by voluntary contributions.

I have now said as much as time will allow me to sketch the history and indicate the great charitable work done in these hospitals; but they have a purpose which is only second to healing the sick, that of helping to educate those whose intention it is to exercise the healing art; and as in common with our work of charity it is one of the reasons why we hold the Grant which some of our neighbours would deny us at present, it is right that I should refer to it. It is not generally known that Dublin is the second centre of medical education in the kingdom, next in size to Edinburgh, and larger than even London. Statistics laid before Committees have shown that the public medical services are extensively fed by the alumni of the Dublin schools; and when I tell you that there are 1,300 or 1,400 students of medicine in this city, but a comparatively small number of whom find room for practice in our own land, you will see what a great educational work we do for the world at large. How the school has grown may be gathered from Wilde's evidence before the House of Commons in 1855, when he deposed that the entire class in Dublin amounted to about 478 students. The evidence of the important position occupied by Dublin as a school of medicine is too extensive for me to go into now, and the fact too evident to require demonstration. The number of students and abundance of able teachers is mainly fostered by two things—one the constant supply of subjects for dissection, the other the amount of hospital accommodation. These are the factors that make a great school of medicine. In every centre of medical education there are two classes of schools—one the elementary school, where anatomy and the other alphabetical subjects of our studies are taught; the second the hospital or school-clinical, where at the bedside and in the *post-mortem* room we learn to apply that alphabetical knowledge, and, by the observation of the progress of disease and its effects, to syllable that practical acquaintance with morbid states which is our greatest qualification for our calling. In the elementary school we study the healthy body and the laws that govern it, in the clinical school we apply our knowledge to disease.

I speak the honest conviction of my mind formed by twenty years' experience as a teacher, when I tell you that I believe there

is no centre of medical education superior to Dublin, and there are few to equal it. I speak of the school as a whole, taking its advantages and its demerits. There are cities where a particular subject is taught, for one reason or another, with surpassing excellence; but, for superiority in many, and high average merit in all, I yield the palm to no place other than that in which you and I live and work.

There is one point in which I conceive we in Dublin are in advance of many other places: we have now in all cases severed the elementary school from the hospital or clinical school—a matter becoming more important as our knowledge of the germ theory of disease improves. It would be idle at this day to dispute the danger of too intimate a connexion between the dissecting-room and the bedside. The risk is now too well known for us not to congratulate ourselves that in the respect of separating the study of the living from that of the dead we are better in Dublin than in other places. As far as this Hospital is concerned we find the first recognition of this principle—which has been more developed in later years—in 1830. At that time men were admitted to our profession only by apprenticeship; it was not the etiquette for physicians to take apprentices, and this source of emolument fell to the surgeons, who used the bodies of those who died in the Hospital for anatomical purposes. A note in a copy of the Report of 1830, in the possession of the Board of Governors, states that not only were the salaries of the surgeons stopped on the recommendation of the Commission which had then sat, but that their other benefits were greatly diminished by the recent regulation of placing at the disposal of the inspector of anatomy the unclaimed bodies of all persons dying in the institution. This implies the removal of all the elementary work of anatomy from the Hospital.

It is the intimate connection between the clinical and elementary schools in London which gives colour to the absurd and misconceived attacks of the anti-vivisectionists about experiments in hospitals. These experiments are made (if made at all) in the elementary schools and not at the bedside; but the mistake arising from the unity of the establishments fosters the alarm created in ignorant minds by these agitators.

Did time allow I had intended not only to tell you something of the development and work of these hospitals, but to speak of that which is indissolubly linked with their history—the names and

labours of their surgeons and physicians. Our roll is a distinguished one, and numbers, without the living, whom I am forbidden to mention, no less than 27 physicians and 19 surgeons who have done their work and, with one exception, gone to their reward. The exception is found in the venerable John M'Donnell, who, appointed surgeon to the Richmond Hospital just fifty years ago, and retired in the middle of the century, yet lives in honoured age to watch the success of his son, and to be a patriarch among the surgeons of Dublin.

Other lives have been shorter, and I am reminded that as, standing here exactly ten years ago, I had to record the death of the last surgeon who has been taken from us, so, to-day I have to mourn the loss of the physician just gone to his account. Benjamin George M'Dowel has died in the full vigour of life, and at a time when his unimpaired powers leave the strongest memories of him behind. His life, particularly in its earlier years, was one of activity; he has left his mark on contemporary literature in the shape of many contributions to pathology and medicine published in the Dublin journals of the time; and in other writings, notably those admirable papers on anatomical subjects which he contributed to Todd's Cyclopædia. By those who knew him he will be best remembered as a lecturer and clinical teacher; in these capacities he had few equals, and his power of engaging the attention of a class was only rivalled by the quick sympathy which fascinated the affections of his hearers as much as his ability did their minds. As a colleague we shall miss his unvarying courtesy and good temper, no less than the clear, rapid, and unlaboured judgment, which made intercourse with him as pleasant as it was instructive, and if,

> "To live in hearts we leave behind
> Is not to die,"

it will be long before he is forgotten.

The list of our predecessors contains full material for the creation of emulation, if such be needed, in those who follow them. From a roll of fame which it is almost invidious to analyse, the names of Perceval, Cheyne, Crampton, and Corrigan, carry many a medical title-page to the memory of the student; while Peile, of surgical fame, who devised a staff for lithotomy, and the memory of whom still lives in surgical procedure and quaint fame, was appointed in 1790. Charles Hawkes Todd, himself a well-known surgeon and the progenitor of a yet more distinguished son, and Richard Carmichael of syphilitic fame—and Ephraim M'Dowel, the father

of him we have just lost, are later items in our blazon. Edward Hutton, Robert Adams, whose able and beautiful books are the authority to-day on rheumatic gout, and whose preparations enrich our museum, and Robert Smith—better known to those of us who are at the meridian of life by the affectionate "Bob," applied to him by students (behind his back), are names known all over the world.

The works of Smith on "Neuroma" and on "Fractures in the Vicinity of Joints" are living evidences of his fame; his preparations illustrative of those books are enshrined here, and are often the object of pilgrimages from abroad. I think that Smith's book on fractures is the greatest systematic study on a surgical subject the Dublin school has ever produced, and is a surpassing monument of labour, ability, and style.

Our quaintest writer, if we consider his subject, has perhaps been James O'Beirne, the inventor of the "long tube," and the writer of a book on a very savoury but unmentionable subject, the only ridiculous part of which is the inscription, for, with singular infelicity, he dedicated it to the Lord Lieutenant of the time!

Our ways, as a rule, have been smooth, and as might be surmised from their labours, our staff have confined themselves to the politics of their profession; but once at least we had an adventurer in the greater war among us, for in the proceedings of the Governors on November 15, 1798, we find this entry:—

"Whereas, it appears by an Act of the last session of Parliament, that William James MacNevin, Doctor of Physick, one of the Physicians of the House of Industry, hath confessed himself guilty of High Treason, and besought his Majesty that all further prosecution should stop and surcease, on condition of his Banishment from his Majesty's Dominions,

"Resolved—That the said William James MacNevin be and he is hereby removed from the said place or office of one of the Physicians to the House of Industry."

But, *Tempora mutantur, nos et mutamur in illis*, and we come to the more cheerful present.

Since we last met, the death of our colleague has caused other changes among us. Dr. Nugent, whom we all esteem so highly, has been elected to the post of Physician, and if the work he has done as a subordinate be any earnest of what we are to expect in the future, you will agree with me in looking on his appointment as a fortunate one. His place as assistant has been filled by

Dr. O'Carroll, in whom we believe we shall find an able colleague, and whom we cordially welcome among us.

I cannot pass from the educational aspect of these hospitals without a reference to the most able defence of them that ever was given—Corrigan's evidence in 1855. You who know the place and its ways, will agree with him that "these hospitals constitute a complete medical school—that is, a school in which medicine and surgery are taught, and, what is in addition of immense importance, simple and eruptive fevers are studied." He laid much weight on the fact, patent to all experienced teachers, that fever should be taught in a branch of a general hospital, and he spoke volumes for the medical staff when he deposed that out of 719 contributions, which at that time had been made before the Pathological Society, 400 had come from the House of Industry; that one-sixth of the entire writing in the *Dublin Journal of Medical Science*, and 14 out of 37 papers in the *Dublin Hospital Gazette*, had a like parentage.

It is not for me to speak of the work of those who are present, but I am not exceeding the bounds of good taste if at this juncture I claim for the institution that it keeps at least abreast of every advance in science, and that if we were put on our defence we could show as good a record as Corrigan claimed for us thirty years ago. There is to me no more convincing evidence of the class of education afforded here than the success of our pupils in after-life; the number of them who hold at this moment the highest positions in the country is quite remarkable, and whether you search the list of hospital physicians and surgeons in Dublin, or look further a-field to the infirmary surgeons, and men holding workhouse appointments through the country, you cannot fail to be struck with the truth of what I say. One of the most gratifying proofs of the material and method we have here is the increasing number of senior students from other hospitals who seek our clinical offices.

But, gentlemen, if I were to give a course of lectures as long as those you find such hardship in attending, I could continue to dilate upon the past story and present use of these hospitals. It is not enough in these days of utilitarianism to build our hopes of countenance and support upon the possession of a long and distinguished history—therefore, I have tried to show that we are as worthy in the present as in the past, and that no decadence has taken place in our charitable or educational functions. I have only been able to hint at things each of which in itself would form material for an address. I have told you of the condition of affairs

in early times, not only that you might be interested historically, but that you might be instructed by a comparison of the state of things you will find here now with that which existed at an antecedent period, and that by thinking of the evils of the past you may be able to measure the advantages of to-day. If you have followed me even in outlines I could not stop to define, you will say that if we have had our faults—and who has not—our course has been one of steady progress, that we have done, and do, a great educational work, that it has been our happy lot to heal the sick and never turn the suffering from our doors; and that now when a question about our grants is raised, to the credit of these hospitals be it said, their history is their best defence, and that born of an attempt to ameliorate poverty and diminish vice they have shaken off the less kindred of their early associations, have kept abreast of science, and have grown and ripened with the development of the laws passed for the relief of the poor and help of those who are afflicted.

ART. XXIII.—*A Case of True Relapse in Enteric Fever.*[a] By J. W. MOORE, M.D., M.Ch., Univ. Dubl.; F.K.Q.C.P.; Physician to the Meath Hospital and County Dublin Infirmary; formerly Senior Physician to Cork-street Fever Hospital and House of Recovery, Dublin; Ex-Scholar, Trin. Coll. Dubl.; Lecturer on Practice of Medicine in the Carmichael College of Medicine, Dublin.

AMONG the many causes of renewed pyrexia, or feverishness, in the later stages of enteric fever, or in convalescence from this disease, true relapse necessarily occupies a foremost place. And this arises, not so much from any increased danger to the patient's life—which is theoretical rather than founded on fact—as from the comparative infrequency of the occurrence of true relapse in this form of continued fever.

By "true relapse" I understand a second attack, in which the characteristic phenomena of enteric fever present themselves in sufficient number to establish the diagnosis of the disease—for example, enlargement of the spleen, abdominal tenderness, ochrey diarrhœa, and rose spots; or epistaxis, feverishness with evening exacerbations, abdominal tenderness and tympanites;

[a] Read before the Medical Section of the Academy of Medicine in Ireland, Friday, November 20, 1885.

or any other grouping of the symptoms of this fever met with in practice; the fact being admitted that a perfectly typical case of primary enteric fever, showing *all* the characters of the disease, does not often come under observation, even in the wards of a large epidemic hospital. "By a relapse of enteric fever," writes Murchison,[a] "is understood a second evolution of the specific febrile process, after convalescence from the first attack is fairly established. Relapses must not be confounded with the *recrudescences*, which are common during the stage of ulceration."

Without further preface, I will detail the salient points in a case which falls within the limits of the foregoing definition:—

On Saturday, January 24, 1885, Mrs. Mary B., aged twenty, a domestic servant, was admitted into Cork-street Fever Hospital, under my care, at the request of Dr. S. M. MacSwiney, F.K.Q.C.P., who had been called to see her when she was already several days ill, and who recognised her ailment as enteric fever. She had been married not long previously, but menstruation was regular up to the time of her illness, and there was no reason to believe that she was pregnant.

When I visited the hospital on the morning of the 25th I found that Mrs. B. had complained of weakness and chilliness nine days before. Diarrhœa soon set in, for which she was treated by a respectable general practitioner, who was at the disadvantage of seeing the patient up and dressed, and so failed to recognise the true nature of the case. At last she took to bed, and was seen by Dr. MacSwiney, who advised her removal to hospital.

At my first visit, her pulse was 120, respirations 32, and temperature (10 a.m.) 103·2°. The area of splenic dulness was enlarged. There was a good deal of tympanites, and some tenderness on pressure existed in the iliac fossæ. She was passing from four to six yellowish fluid motions in the twenty-four hours. There was insomnia, and her mental state was unsatisfactory—nervous and excited. Crepitating râles were audible over the back of both lungs. Several typical rose-spots were detected on the trunk, and also some taches bleuâtres. A glycerine and laudanum poultice was applied to the abdomen. The back of the chest was drycupped. She was ordered ice, milk and arrowroot, and 6 ozs. of port wine. Chalk mixture, with chlorodyne and compound tincture of chloroform, was prescribed, as well as a full dose of Dover's powder at bedtime. Next day the chest was poulticed with linseed meal sprinkled with powdered camphor, and on the 27th 3-grain doses of quinine were given thrice a day. On the 28th turpentine fomentations were applied

[a] The Continued Fevers of Great Britain. Third edition. Edited by W. Cayley, M.D., F.R.C.P. London: Longmans, Green & Co. 1884. Page 552.

to both chest and abdomen, and on the 29th a further increase of diarrhœa required the administration of an enema containing 12 minims of tincture of opium in two ounces of mucilage of starch.

On January 30, the 15th day of the fever, the patient appeared to be going on well—P. 106, R. 26, T. 101·8° in the forenoon, rising only to 102·6° in the evening. At night some intestinal hæmorrhage occurred. Next morning a poultice of crushed ice was applied to the abdomen, and three grains of ergotin were ordered to be injected hypodermically should hæmorrhage recur. This did not happen, and the patient began to make excellent way; her pulse and respirations fell and diarrhœa ceased, giving place to obstinate constipation—a point of some moment in the light of the subsequent history of the case. Reference to the clinical chart will show that from the 16th to the 23rd days of the fever inclusive the evening exacerbations of pyrexia were very marked, the temperature being from 3° to 4° higher than in the forenoons.

On the morning of February 8 (24th day) the body was covered with a plentiful crop of sudamina, but the temperature was only 98°. The following evening it did not exceed 100·1°, and 48 hours afterwards it became permanently normal.

Mrs. B. remained in hospital until February 28, when she was sent to the Convalescent Home, Lynden, Blackrock, this being the 18th day of complete apyrexia and the 44th day from the commencement of her illness. During the last three weeks of her stay in hospital the bowels were obstinate, and had to be kept in order by the almost periodic use of simple enemata or the occasional administration of castor-oil in small and repeated doses.

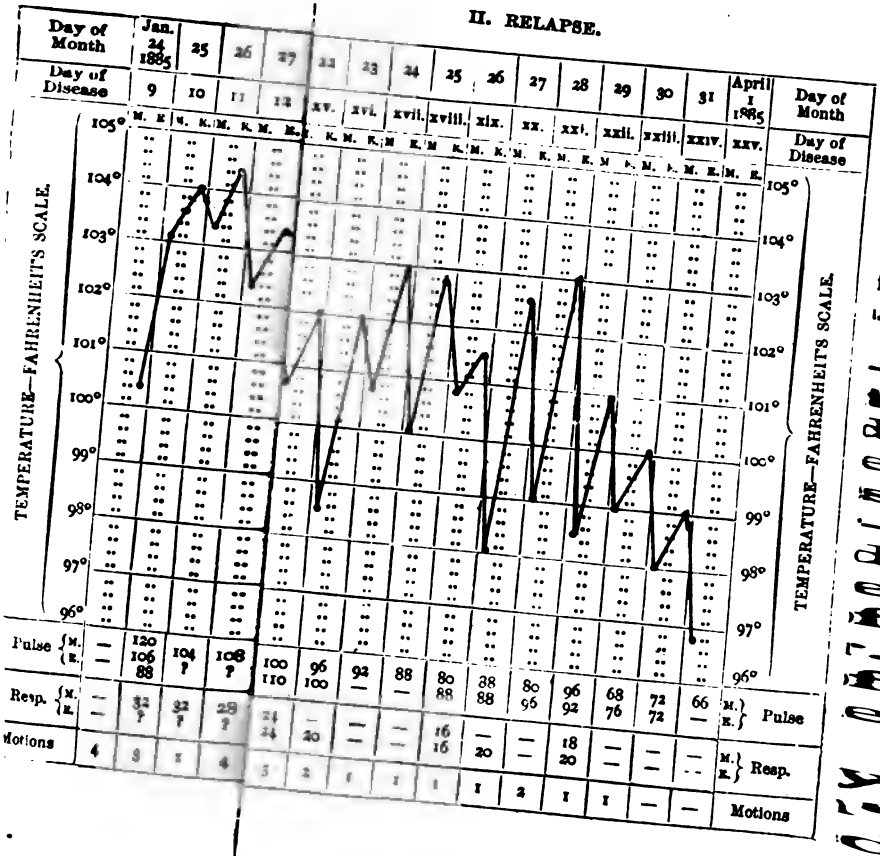
During the first few days of her stay at the Convalescent Home, Mrs. B. made satisfactory progress. Her stomach then became irritable, she lost her appetite, began to cough, and felt hot and cold by turns. She came into Dublin, and in the course of a few days called to see me. I found her tongue furred and her pulse quick. There were few, if any, physical signs of chest affection, but she looked pale and thin, like one who would readily run into acute consumption. Acting under my advice, she went home to bed, and I visited her on Thursday, March 19, the twelfth day from the appearance of symptoms of her second illness. Her pulse at 5 p.m. was 108, and her temperature was 103°.

Next day she was again admitted to Cork-street Hospital, under my care. The morning temperature was only 99·1°, but in the evening the thermometer marked 102·8° in the axilla. There was some increased splenic dulness on percussion, and a few rose spots were found on the chest and abdomen. On this and the three following days there was a tendency to diarrhœa—two or three yellow soft motions occurring each day. Afterwards the bowels acted regularly once a day. The course of

this second fever is sufficiently well shown on the accompanying chart. It will be seen that there was a well-marked [illegible] in the temperature [illegible] low, while

[illegible]lt, Recovery.

II. RELAPSE.



Zurich, [illegible]

Maclagan in 13 (10 per cent.) of 128 cases at Dundee. Nevertheless, as compared with typhus, in which true relapse is one of the rarest events in clinical observation, these are all relatively

[a] Loc. cit., page 552.

high percentages. Out of 18,268 cases of typhus reported at the London Fever Hospital during 23 years, there is *only one instance* of a true relapse, although in several instances a genuine has been preceded by an abortive attack.[a]

Again, it is worth noting that the relapse ran a milder and slightly shorter course than the preliminary attack. The first fever terminated on the twenty-seventh day. Then came an apyrexial period of 24 days—from the 11th of February to the 7th of March—and this was lastly followed by a fever which ran a twenty-four days' course. All this is in accordance with clinical experience. Thus, Murchison[b] says that the duration of the second attack is usually, but not necessarily, shorter and milder than that of the first. Of 24 cases collected from various sources by Michel, the mean duration of the first attack was 27 days; of the intermission, 11 days (shortest 2 and longest 31 days); and of the relapse—shortest, 16 days; longest, 30. In 53 cases which came under Murchison's own observation, and which he has tabulated, the average duration was—of the first attack, 27·0 days; of the intermission, 11·76 days; and of the relapse, 16·4 days. By the way, of these 53 patients only 5 died in the relapse, the mortality being at the rate of 9·4 per cent. compared with 17·26 per cent. in primary attacks in 5,911 cases admitted into the London Fever Hospital. From this it would appear that a relapse is only about half as dangerous to life as a first attack.

The last point to be considered is the probable ætiology of relapse in enteric fever. In 1846 Hamernjk put forward the view that relapse was due to reabsorption of the "typhous material" thrown off by the patient's own bowel.[c] Dr. T. J. Maclagan adopts this view, believing that the surviving healthy glands become inoculated by the sloughs thrown off from those first affected. In accordance with this theory, Maclagan further holds that relapses are met with only when there has been constipation in convalescence. This condition was certainly present in Mrs. B.'s case, and we are justified in assuming that the non-elimination of the fever poison, owing to constipation, was at all events one factor, and that an important one, in the causation of the second attack.

It may be objected that to adopt this view in its entirety is to

[a] Loc. cit. page 189.

[b] Loc. cit., page 553.

[c] Murchison, loc. cit., page 555; and Hamernjk, Prag. Vierteljahrsch. 1846. X. I. Zur Pathologie und Diagnose des Typhus).

pledge ourselves to the exploded theory of the local origin of the phenomena of enteric fever—is to revert to Broussais' doctrine, according to which the pyrexia of the disease is the result of a local inflammation of the intestinal glands. But this is not stated. What we hold is that, as a result of constipation, the fever poison finds no exit from the system *viâ* the bowels, it is then absorbed by the glands which have hitherto escaped the characteristic secondary inflammation of the disease, and passing into the blood once more sets up an essential, not a symptomatic, fever.

One other theory of relapse may be drawn from the analogy of true relapsing, or spirillum, fever. In the third volume of the *Irish Hospital Gazette* (April 1, 1875, page 105) Dr. Gerald F. Yeo quotes from the *Centralblatt für klinische Medicin* an observation of Dr. M. Laptachinski, that with each attack of pyrexia in spirillum fever a discharge of the spleen contents into the blood takes place. From observation of the epidemic of relapsing fever of 1847-49 in Ireland, the late Dr. Alfred Hudson was led to believe in the frequent co-existence of the poison of endemic typhoid with epidemic relapsing fever—the one disease replacing the other in the same patient.

He also noticed the influence upon the blood of the reabsorption into the circulation of a quantity of depraved blood laid up, as it were, in the congested spleen, and commingling with the circulating mass after crisis, in the purifying effect of which it had not shared. He adds:—"I shall be mistaken if future observations do not prove this to be an important element, not only in the production of relapse, *but also in determining the enteric lesions*, which occur during the second and third attacks, in this form of fever."[a] Remembering how constantly the spleen is enlarged and congested in enteric fever, we may perhaps apply to this disease also the ingenious pathological hypothesis which was first advanced, as we have seen, by Dr. Hudson, in explanation of the relapses in spirillum fever.

[a] Lectures on the Study of Fever. Second Edition. 1867. Pages 147 and 287.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Insane in the United States and Canada. By D. Hack Tuke, M.D. LL.D. London: H. K. Lewis. Pp. 242. With Appendices. 1885.

The volume before us embodies the observations of its author, Dr. D. H. Tuke—who has, perhaps, contributed more to the recent literature of Insanity than any other living British alienist—upon the condition of the insane and of the asylums for their care and treatment in the United States and Canada, made during a tour through these countries in the autumn of 1884. In the opening chapter Dr. Tuke reviews the treatment of the insane in the early period of the American Republic, coupling this with a sketch of the life and work of Dr. Benjamin Rush, the pioneer of the healing art in that country. Reference is made to the treatment of insanity by Dr. Rush, especially that by blood-letting, which he most strenuously advocated and practised, and Dr. Tuke takes the opportunity of quoting the opinions of the most noted alienist physicians of those days, both European and American, on the propriety of venesection in the treatment of the insane. The second chapter contains the history of the provisions for the insane in the United States from 1752 to 1876. Dr. Tuke points out how the victims of madness had been subjected to the same barbarous neglect and treatment there as with us. "Puritanism," he says, "in the first instance, was only too likely to treat some forms of madness as instances of witchcraft, and their subjects would be punished or put to death accordingly; other cases would be simply referred to the cruel action of Satan on the mind, and proper medical treatment would be the last thing thought of." He then narrates the various steps taken during the past half century to ameliorate the condition of the unhappy sufferers, in which movement a lady—Miss Dix—took a most prominent part, presenting memorials to Congress in which she called attention to the uncared-for and distressful condition of the insane throughout the States, and praying for legislation on

their behalf. This movement led to the erection of numerous public asylums or "hospitals for the insane," as the Americans very properly call such institutions. In 1873 Dr. Ray, then one of the foremost American alienist physicians, writes to Dr. Tuke that there were in every State throughout the Union, excepting Delaware and one or two of the newest States, one or more hospitals for the insane, all of which were liberally supported in most respects. In bringing this chapter to a close Dr. Tuke warmly defends the medical superintendents of the American asylums from the aspersions cast upon them in an article which appeared in the *Lancet* for November 13, 1875, in which they were charged with not having yet "mastered the fundamental principles of the remedial system," and with "still adhering to the old terrorism, tempered with petty tyranny." Can we be surprised, he says, that the feelings of men engaged in a noble and arduous work—the work of their lives—should be hurt when they read such charges made by members of the same profession. "Let us give credit," says Dr. Tuke, "where credit is due, and not involve in indiscriminate censure worthy and unworthy superintendents, good and bad asylums; but if we denounce at all, let us confine our denunciation to those institutions in which ill-treatment is known to prevail." A list of 76 hospitals for the insane, erected between the years 1773 and 1876, is appended, to which is added a further list of 13 others opened since then. The third chapter deals with the present condition of the insane in the United States. Dr. Tuke writes that—"In my recent visit to the asylums of the States of New Hampshire, Vermont, Massachusetts, New York, Connecticut, Rhode Island, Pennsylvania, New Jersey, the District of Columbia, Illinois, Wisconsin, and Maryland, I found that, with some exceptions, their condition was satisfactory, many being admirably managed, and reflecting great credit upon all engaged in their administration. As a class the American asylum superintendents are excellent men, devoted to their work, and as honourable, intelligent, and humane as those in any other country."

In reference to the burning question of restraint, with the excessive and unjustifiable use of which the American superintendents have been so frequently charged, Dr. Tuke remarks, that so far as his opportunities enabled him to form an opinion, the facts do not warrant the accusation; restraint is undoubtedly employed in a larger number of instances than in England, but in many American asylums there is either no restraint whatever, or it is so

slight and manifestly necessary for surgical reasons, that hypercriticism alone would find fault. Many details regarding the statistics and nature of the modes of restraint used are given, and Dr. Tuke calmly and dispassionately expresses his approbation, or dissent, as the case may be, without that wholesale condemnation which is so often indulged in. Of seclusion he says that while some superintendents, like Dr. Gray of Utica, state that they never resort to it, there was evidence of its use to as great an extent as in Britain. In only one asylum—Danvers, Mass.—did he see a padded room. With regard to the strictly medical treatment of the insane, he does not think there is much, if any, difference between the American and the English practice. Perhaps fewer new drugs are administered in the former than in the latter. Hyoscyamin is used hypodermically in a good many asylums. Chloral and bromide of potassium are given to much the same extent as they are in England—if anything, more in America, 20 grains of each being a frequent dose at bedtime. The American asylums are well supplied with baths, which are employed to much the same extent and under the same circumstances as with us, but he did not hear of the prolonged bath being used in any asylum. Shower baths, Dr. Tuke believes, are never made use of, and he is not aware that any asylum in the States, besides those at Kankakee and Utica, is provided with a Turkish bath. The wet or dry pack was not met with. In connection with treatment, Dr. Tuke refers to the recoveries and deaths in American asylums. So far as he has been able to obtain returns, he finds that the rate of recoveries to admissions varies from 20 to 42 per cent. while the mortality in the best asylums does not exceed 5 to 7 per cent., calculated on the average number resident. It has been supposed by some American superintendents that the insane in their country were, as a rule, more continuously violent than in Britain. Dr. Tuke, however, from the testimony of many English attendants who had experience in both countries, is of opinion that the contrary is the case, and that, as a rule, the insane in England are more violent and difficult to manage than those in America. As to the relative frequency of general paralysis, there has hitherto been, and there still is, decidedly less in the American asylums than in England, but Dr. Tuke is sorry to say that it is clearly on the increase, and bids fair to equal in amount that witnessed in the mother country. Till recently it was very rare indeed in women, but it is becoming more frequent

in the female sex. As regards out-of-door employment, Dr. Tuke is of opinion that it is not carried out as extensively as in England; in many instances, however, this is due to the actual want of grounds; but it must be remembered that with us men can work out of doors nearly all the year round, while in America little or nothing can be done from November to April. Considerable attention is paid to indoor amusements and instruction, lectures illustrated with photographs by the magic lantern, concerts, and recitations, are very frequent; in some of the larger asylums every evening in the week being occupied in some way. The latter half of this chapter deals with lunacy legislation in the different States, and it concludes with a review of the relative merits of American and English asylums. This may be a very invidious task to enter upon, but there are few better qualified by reason of experience and breadth of view to undertake it than Dr. Tuke. He awards praise where praise is due, and he condemns what in his judgment merits condemnation. We do not think that American asylum superintendents who may peruse Dr. Tuke's criticisms will have any reason to complain of his having taken a partial or one-sided view, or of his posing as the champion of British institutions, to the depreciation of those across the Atlantic. Dr. Tuke visited forty asylums in the States and Canada, and the remaining portion of his book is devoted to a narration of his observations on the different asylums inspected. Many interesting details are noted, Dr. Tuke remarking that the well-known inventive capacity of the American mind has been turned to account in many ways, and that English superintendents, who may have the opportunity of visiting American asylums, will often pick up hints which, though perhaps of not very great importance, yet may be turned to practical account. Dr. Tuke has found it necessary to severely criticise the condition of the asylum at Longue Pointe, near Montreal, and in a milder degree that at Beau Port, Quebec. It is satisfactory to note that after the publication of his report pointing out the defects in the administration, the Medico-Chirurgical Society of Montreal took up the subject, and passed a series of resolutions, endorsing Dr. Tuke's statements, and condemning the system of management and maintenance of the asylums in the Province. If Dr. Tuke's report lead to reforms in these respects, his visit to the Dominion will have borne good fruit. As regards the asylums in Ontario, Dr. Tuke has nothing to say of them but what is flattering. Detailed descriptions are given of the asylums

at Toronto, London, Kingston, and Hamilton. Having recently had an opportunity of visiting the London asylum, we can freely corroborate what Dr. Tuke says of its excellent arrangements and successful management, under its able superintendent, Dr. Bucke. Dr. Tuke has completed his work by the addition of a number of Appendices, containing important information regarding the condition and statistics of the insane in America. The book is full of interest to those engaged in the specialty, as it also must be so to the laity who are interested in the progress of American Institutions. The information it contains cannot have been collected without very considerable labour and research. It is worthy of the reputation of its author, and we anticipate for it a wide circulation, especially in the United States and Canada, where Dr. Tuke met with such a hearty and hospitable reception.

R. A.

School Hygiene and Diseases Incidental to School Life. By ROBERT FARQUHARSON, M.P., M.D. Edin.; F.R.C.P. Lond.; LL.D. Aberdeen; formerly Assistant-Physician to St. Mary's Hospital; Physician to the Belgrave Hospital for Children; and Medical Officer to Rugby School. London: Smith, Elder, & Co. 1885. Pp. 369.

THIS manual deserves attention, as its author can deal with his subject from a three-fold point of view—as a physician, a medical attendant to a public school, and an active member of the Legislature; thus, whilst special knowledge is brought to bear, the faults that too often attend the reasoning of specialists are avoided, and, for the most part, the subject is treated in a broad and practical manner.

Dr. Farquharson appeals to three classes of readers—to head-masters, to medical officers of schools, and to parents who are choosing a school for their children, and different parts of his book will be found of interest and value to these three classes; but probably its most marked, as well as its most extended, sphere of influence will be amongst parents, and the lesson Dr. Farquharson desires them to learn cannot be better summed up than in his own words:—"After all, the moral to be drawn is that parents should cease to select their schools solely on account of the eminence of head-master and staff, of the successes gained in the arena of competition; but should look very carefully and narrowly into all

sanitary arrangements, and be very much guided by the completeness of these." If parents learn this lesson, school authorities will rapidly learn, in self-interest, the necessity of paying stricter attention to the hygiene of their schools.

The scope of the book is shown by the headings of the six chapters into which it is divided. They are:—I. School Buildings. II. School Diet. III. School Work. IV. School Play. V. The Duties of the School Doctor. VI. School Diseases. Each chapter forms a complete essay, and may be read by itself, yet the chapters never overlap, and so the book is readable in its complete form.

In Chapter I. the author advises, when possible, the removal of schools from the too near neighbourhood of a large town to a perfect, but, unfortunately, rather rarely met, site—viz., one with "a southern exposure, sheltered, if possible, from the north, a gravel soil, and a moderate elevation securing a good drainage outfall. The climate should be dry and bracing, but not uncomfortably keen." He then gives his opinion in favour of the adoption of separate houses in preference to the "hostel" system, and makes a strong plea for æsthetic surroundings, in beauty of building and taste of decorations, pictures, &c., urging that during the years of school life the mind is in an unconsciously impressionable condition, and if not influenced by beautiful surroundings, the future capacity of enjoying beauty may be lessened, or, if fully developed, the feeling of pride and affection that ought to be felt for one's old school will be supplanted by a feeling of dislike.

Sleeping accommodation is carefully dealt with, 800 to 1,000 cubic feet being laid down as the minimal air space allowed to each bed, Dr. Clement Duke's arrangement of the space being approved of. "Taking a school bed at 3 × 6 feet, the superficial area should be quite four times that—6 × 12 feet—and the room 12 feet high." Cubicles are properly condemned; to a parent they look comfortable, and their semi-privacy seems desirable; they are, however, bad on sanitary and moral grounds. With regard to ventilation of dormitories, Tobin's tubes are recommended as inlets and open fireplaces as outlets. Openings high up into the chimneys, or into the outer air, might with advantage be added to the outlets, and some form of sash ventilator to the inlets.

In dealing with class-rooms, the extraordinary Rule 15 of the Education Department is quoted:—"The windows should be so

placed that a full light should fall upon the faces both of the teachers and of the child;" and it is properly pointed out that pupils should sit in class-rooms with the windows to their left, the light coming as much as possible from above. The question of desks and seats is treated by quotations from various authorities; the author does not commit himself to any one solution of the difficult problem of making the same furniture do for different-sized pupils.

In Chapter II.—School Diet—Dr. Farquharson wanders a good deal from his exact subject, the feeding of infants and the evils of late weaning being discussed. Naturally the use of oatmeal and vegetable broths in schools comes in for many encomiums. On page 53 a rather curious slip occurs. Dr. Farquharson, pleading that children should not be debarred from drinking during meals on the ground that they dilute the gastric juice, goes on to say:—"It will be satisfactory to them to know that this is a delusion. The gastric juice is not secreted until the conclusion (*sic*) of a meal." Of course, not only is the swallowing of food followed immediately by a secretion of gastric juice, but even the mental emotion caused by an appetising odour may cause its outpouring. Dr. Farquharson omits the real evil results of sipping water during meals—that the food is not properly masticated and mixed with saliva, and that consequently digestion and the teeth suffer. The most interesting part of this chapter is an account of some of the cheap dinners that have been established in connection with Board Schools, but none of the valuable tables of cost and food value of the meals, as published during the earlier part of the year in the *Sanitary Record*, are given.

In Chapter III.—School Work—Dr. Farquharson insists on the importance of a boy's education being conducted with some reference to his future career in life. He also deals exhaustively with the question of over-work under the Educational Code, coming to the conclusion "that the educational routine laid down by the Code is not too much for healthy children to do, but that certain conditions, and notably those of under-feeding, are occasionally present, which cause symptoms attributable to over-work and over-pressure." And again:—"A walk of one mile may not be too much exercise for ordinary children, but a walk of 100 yards may for rickety or under-fed children. So exercises in Standards I. and II. may be excellent for ordinary children, but they may be too much for under-fed weaklings."

The most useful part of Chapter IV.—School Play—is that dealing with gymnastics in girls' schools. At present some 350 teachers under the London School Board are trained in Ling's Swedish Gymnastics, and about 20,000 girls derive benefit from their instructions.

In Chapter V. the Duties of the School Doctor are shortly dealt with. Dr. Farquharson properly insists that he should be allowed to engage in private practice, and receive a salary and not fees, so that early and prompt action may cut short any threatening epidemic.

Chapter VI.—School Diseases—contains a few hints on the early diagnosis of infectious disease; otherwise it is worse than useless. More than 130 pages are devoted to a popular description of diseases that can be no help to a medical man, and will only be used by the head-master or parents. A page printed in test type, designed to enable parents to judge whether children may be sent to school without first consulting an occulist, is appended to the book. There is no Index.

Elements of Pharmacy, Materia Medica, and Therapeutics. By WILLIAM WHITLA, M.D.; Physician to the Belfast Hospital, &c. Third edition. London: Henry Renshaw. 1885. Pp. 618.

THIS concise and useful manual has, as we expected it would, rapidly and deservedly become a favourite one. First published in the beginning of 1882, a second edition issued early in last year was exhausted in a few months; and now, after a long delay, caused by waiting for the new Pharmacopœia, a third edition is before us. All the changes in and additions to the official publication are incorporated in this edition, which, coming out, as it did, from the press so soon after the Pharmacopœia appeared, is, in this respect, characteristic of the author's energy, and creditable to his printer and publisher.

We have no hesitation in repeating, with regard to it, the high opinion that has been expressed in the pages of this and of other Journals in favour of the former editions. With the exception of some transpositions, the plan of the book is unchanged. The section on non-official remedies is very complete in its information as to the most recently-introduced remedies, as well as concerns those of longer standing and repute. In spite of the condensation

requisite in a work of the kind, each part bears evidence of the extent of the author's study, accurate and discriminating observation, and of his practical experience; and so he has produced a book that has been quickly recognised as one of the most useful of its kind a student or practitioner could possess.

Dwelling-houses: their Sanitary Construction and Arrangements. By W. H. CORFIELD, M.A., M.D. Oxon.; F.R.C.P. Lond.; Professor of Hygiene and Public Health at University College; Medical Officer of Health and Public Analyst for St. George's, Hanover-square. Second Edition. Illustrated. London: H. K. Lewis. 1885. Pp. 117.

THIS is one of the many manuals called forth by the increased interest of the public in sanitary matters. It describes in a clear and popular manner the proper method of construction, the various appliances for ventilating, lighting, and heating houses, and the best means of removing refuse matters. Some of the subjects scarcely receive sufficient attention, as, for instance, lighting is dismissed as soon as the amount of carbonic acid formed respectively in the combustion of gas, candles, and oil is stated, and nothing is said of the choice of gas-burners or lamps, or of albocarbon and other inventions for improving the light. The subject of fire-grates—a very prominent one at present—is also treated very shortly.

A water trough to receive solid particles, placed in the horizontal part of a Tobin's ventilating tube, is spoken of with approval, though it would never be kept filled with water after the first few weeks; and although a long muslin bag hanging in the vertical part of the tube with the point downwards is suggested as an alternative, no mention is made of Teale's muslin screen, which is fixed to a frame and extends diagonally from the top to the bottom of the tube; this is much better than the bag which, if taken out to be washed, would possibly never be replaced. Steven's drawer ventilator is described and figured with approval, but no mention is made of Ellison's radiating ventilator, which is made on the same plan, with the advantages of admitting the air at four sides instead of one, and of not disfiguring the room. Most of the examples being drawn from the Parkes' Museum may perhaps explain this capricious selection.

Some of the illustrations are of the graphic type used so largely

by Dr. Teale, but a great many are very carefully executed, some of the best being borrowed from the catalogue of the Parkes' Museum. There is no index, but an admirable table of contents fully supplies its place—in it the number of each page appears, and the subjects treated in the page are set opposite; the titles of the chapters form appopriate sub-headings, and as the table is clearly printed anything mentioned in the book can be rapidly found.

Contributions to the Surgical Treatment of Tumours of the Abdomen. Part I.—*Hysterectomy for Fibrous Tumours of the Uterus.* By THOMAS KEITH, M.D., LL.D. Printed by Oliver and Boyd, Edinburgh. 1885.

ANY contribution to abdominal surgery coming from so well-known and conscientious a surgeon as Dr. Keith must always arrest attention. This first part of a work which, we hope, will soon be before the profession in its finished state, is devoted to the subject of fibrous tumours of the uterus. Dr. Keith records at some length thirty-eight cases in which he operated, with three deaths. But he does not seem to be quite satisfied with the results, although these are the best that have been secured by any operator in this particular condition. Bigelow has collected and published the cases done up to March, 1884. They number 359, with 132 deaths, or rather more than one in three. Keith, looking at his own cases, which we think examples of the most brilliant and successful surgery, says:—

"I often ask myself the question—Does a mortality of eight per cent. justify an operation for a disease that, as a rule, has only a limited active life, that torments simply, and that only for a time, though of itself it rarely kills? The mortality of an ordinary fibroid, if left alone, is nothing approaching a death-rate of eight per cent. . . . Could we get the mortality down to five per cent. in the bad cases, and these only are the fit subjects, then one might advise interference with a more easy mind. I do not think we can so advise, if the mortality cannot be kept under ten per cent."

Dr. Keith rightly aims high for results; but we think this advice displays an oversensitiveness which does not command approval. Any case of uterine fibroma may become a bad one, rendering the patient's life a miserable one; and the question suggests itself whether we are likely to do better for a woman when

the tumour is as yet of moderate size and the health is good, than by waiting until there is nothing for her but a chance of success when her health has been undermined. Keith thinks we ought not to operate in this last-named class of cases unless we can get a success of 90 per cent. We doubt even the probability of any result approaching this, under such circumstances, and the series of cases before us go far to justify that feeling.

The essay which precedes the cases ought to be read carefully by anyone who may contemplate such a grave operation as hysterectomy. It is full of excellent advice and hints, the fruit of very remarkable experience. He thinks that the operation for the removal of the ovaries and tubes is an excellent device for making the larger proceeding unnecessary. But in order to be successful the tumour must be small, because if it be large the surgeon may be unable to remove the ovaries, and may be compelled to go on to hysterectomy. This happened in nine out of thirty-eight cases. The length of the wound does not influence the results. Keith puts in four stitches to the inch, and he has good reason in the results to induce him to continue that practice. He does not avoid the umbilicus in his incision, but goes right through the middle of it. With regard to the emptying of the bladder before operation, Keith is at issue with most operators:—

"Its size is sometimes remarkable, and it is not an easy matter sometimes to make out its edges, if the ordinary stupid direction be followed, that the bladder be emptied immediately before the operation is begun. Leave it full, and the bladder difficulties are wonderfully modified. Its separation downwards on the tumour is a simple matter."

The following gives the results of Keith's experience:—

"The cases in which, with our present knowledge, hysterectomy may be reasonably advised are:—

"1. In very large rapidly growing tumours of all kinds in young women. By a large tumour I mean a tumour upwards of 20 lb.

"2. In all cases of real fibrous cystic tumours, if they can be removed. Also in all cases of suppurating tumours.

"3. In most of the cases of the soft œdematous fibrous tumour. These often grow to an enormous size, far larger often than any ovarian tumour. I have seen one that would not be less than two hundred pounds weight. Sometimes large quantities of red serum can be removed with much relief, and I have several times been able by this means to carry patients over the menopause, when the necessity for further puncturing ceases. These tumours seem to open up the broad ligaments more than the

ordinary hard tumour, and some that I have removed have had very extensive pelvic attachments. These tumours are much reduced by free purgation.

"4. In cases of large bleeding fibroids of any age, provided that the patients are not approaching fifty years of age, and provided that the lives are practically useless, and that further experience in the operation shall show that the mortality of hysterectomy is likely to diminish.

"5. In certain cases of tumours surrounded by free fluid, the result of peritonitis, provided that the fluid shows a tendency to re-accumulate after two or three punctures. My own experience in such cases is, that after one, two, or three punctures, the fluid does not collect, and it often disappears of itself without any interference. It must not be forgotten, however, that the long-continued irritation of the peritoneum by very large tumours is apt to be followed by degeneration of the surfaces of a sarcomatous and cancerous character. On this point the microscopic examination of the fluid gives positive evidence which will settle the question of interference in any way."

Dr. Keith's style is vigorous and attractive. The story he has to tell is full of interest, and there is no one who will study his essay and cases who will not lay down the book with the conviction that he has read the experience of a great surgeon, told with the strictest regard to truth.

THALLIN.

A DERIVATIVE of quinolin, discovered by Dr. v. Jaksch, of Vienna, has a more agreeable action than kairin, and is more active than antipyrin. As a single dose, 4, 8, 12 grains were given. Thallin has the advantages over antipyrin of smaller dose, a less disagreeable taste and smell, and of rarely producing vomiting. Antipyrin has, on the contrary, the advantages over thallin of much longer duration of action, the absence of shivering, slowness of pulse in proportion to fall of temperature, and a more favourable action on the joints in acute articular rheumatism.—*Le Progrès Médical*, May 16th, 1885. M. Jaccoud gives his experience on the action of thallin, comprising a summary of the results of 43 administrations in 11 patients—24 administrations to cases of typhoid, 17 to cases of febrile tuberculosis, once to a case of pneumonia, and once to a case of erysipelas of face, and he comes to the following conclusion:—Thallin is an antipyretic which surpasses all other antithermic agents. By the administration of 5 or 10 centigrammes every hour, one can maintain a permanent apyrexial condition in febrile cases. It is certain that in thallin we have the means of suppressing a febrile temperature for as long a time as we wish.—*Gazette des Hôpitaux*, June 25th, 1885, and *Bristol Med. Chir. Jour.*, Sept., 1885.

PART III.

HALF-YEARLY REPORTS.

REPORT ON
MATERIA MEDICA AND THERAPEUTICS.[a]

By WALTER G. SMITH, M.D., Univ. Dubl.; Fellow K. & Q.C.P.I.; Physician to Sir Patrick Dun's Hospital; King's Professor of Materia Medica, School of Physic, T.C.D.

ART. 3. Coca and Cocain.
„ 1. Ergot.
„ 7. Eucalyptus oil.
„ 6. Lupus, treatment of.
„ 9. Medicated Pastes.
„ 8. Naphthalin.
„ 5. Oleates.
„ 11. Phenol-camphor.
„ 2. Phosphorus.
„ 10. Skin Diseases, treatment of.
„ 4. Tinea tonsurans, treatment of.

1. *The Constituents of Ergot and their Physiological Action.*—Dr. Kobert, of Strassburg, has made a most elaborate investigation upon ergot, and describes three physiologically active bodies obtained from it. Two of these are of acid and the third of basic character.

(1.) *Ergotinic acid.*—This is the principal constituent of the sclerotinic acid of Dragendorff and Podwyssotzki. It contains nitrogen, and is of a glucosidal nature. From experiments conducted upon rabbits and guinea-pigs the author concludes that ergotinic acid, even when injected subcutaneously in doses that produced the deepest narcosis and paralysis of the spinal cord, is

[a] The author of this Report, desirous that no contribution to the subjects of Materia Medica and Therapeutics should remain unnoticed, will be glad to receive any publications which treat of them. If sent to the correspondents of the Journal they will be forwarded.

absolutely without influence upon the movements of the gravid and non-gravid uterus in animals. Clinical observations on the action of sclerotinic acid in childbirth corresponded with this result, and the various "ergotines" are to be judged from this standpoint.

(2.) *Sphacelinic Acid.*—An appropriate designation (ὁ σφακελός, gangrene), the principal action of sphacelinic acid being to produce gangrene. The acid is devoid of nitrogen, and gradually disappears from ergot during keeping.

(3.) *Cornutin.*—This basic body is not identical with either the crystallised or the amorphous ergotinin of Tanret, although, perhaps, chemically related. Cornutin is extremely poisonous, whilst both the ergotinines are non-poisonous. The physiological action of cornutin in dogs consists essentially in the production of a characteristic stiffness of the limbs; increasing with large doses to strong cramps, very similar to epileptic seizures. It was recognised to exercise an influence on the movements of the uterus, but it is extremely poisonous, and the movements of the uterus differed completely from those produced by ergot. The author therefore looks upon sphacelinic acid as the substance which exercises the most important influence upon the uterus, which, however, does not exclude the possibility that this action is intensified by cornutin.—(*Pharm. Journ.*, Feb. 21, 1885.)

2. *Effect of Phosphorus on the Fœtus.*—Dr. J. M. Minra (*Virchow's Arch.*, xcvi., 1) has recently made a series of interesting experiments for the purpose of determining whether, in cases of acute intoxication by phosphorus of pregnant animals, the poison is also communicated to the fœtus. Four such observations were made on pregnant guinea-pigs, they receiving in two doses, after two days' fasting, one drachm to ninety minims of a five per cent. phosphorus oil. Three to four days later the animals experimented upon were killed by an injection of morphia into the external jugular vein. In all the cases, fatty degeneration of the liver cells, of the muscle of the heart, of the epithelium of the kidneys, and of the gastric follicles, were observed on the animals, as well as on the fœtus they contained. In one fœtus many ecchymotic spots were found on the mucous membrane of the stomach. Icterus was not met with in any of the cases, probably in consequence of the comparatively small doses. In the animals specially kept for control-experiments, not a single one of the morbid alterations met with was to be observed.

Basing his opinion upon the results thus obtained, Minra thinks that the administration of phosphorus in the case of pregnant women should be accompanied by the greatest care, as the co-affection of the fœtus is to be feared in every case, and this may be followed by the gravest consequences.—(*Med. and Surg. Rep.*, May 9, 1885.)

3. *Coca and Cocain.*—It is little more than a year since cocain flashed out from previous obscurity upon the medical world, and it at once secured a place in therapeutics which can scarcely be paralleled in the history of any other drug. Already it counts a literature of its own so extensive and so many-sided that it is difficult to deal with it summarily. Numerous observations have shown that the application of a few drops of a 4 per cent. solution to the eye will, in a few minutes, produce so complete a loss of sensation in the part that operations for cataract, squint, &c., can be performed without causing the patient the slightest pain or discomfort. There is at first slight dilatation of the pupil, but it is transitory, and is not accompanied by any material interference with the sight. The action of this peculiar principle is exerted in a similar manner on other mucous membranes, so that anæsthesia may be induced of the ear, nose, mouth, urethra, vagina, or rectum. For producing anæsthesia of mucous membrane of organs other than eye or ear, a stronger solution (10 or 20 per cent.) is required. For dental purposes the citrate of cocain has many advantages over the hydrochlorate. It is made into a paste which, after being wrapped in cotton-wool and moistened, is placed in the hollow of the decayed tooth. Operations can then be performed, or even the tooth extracted without pain. Cocain is likewise used for internal administration as a nervous stimulant, and is found to be admirably adapted for the treatment of dipsomaniacs.

Coca itself is again coming into use, and is now prescribed largely in the treatment of various nerve affections. It is an excellent remedy for many forms of neuralgia, and is highly esteemed in convalescence from long illnesses. Mariana's Coca Wine is an excellent preparation, and the Valoid of Coca, recently introduced by Messrs. Burroughs and Wellcome, of Snow Hill Buildings, E.C., is active, and may be used with confidence when the full physiological action of the drug is needed. It has recently been employed with much success in the treatment of insomnia and allied conditions. Each drop of the valoid is equivalent to a

grain of the drug, and the dose is from two to three drachms in a little water.

Cocain tabloids (Burroughs and Wellcome) constitute an excellent means of administering this valuable remedy. They cause no irritation locally, and produce complete anæsthesia.

4. *A New Method of Treating Tinea Tonsurans.*—Having come to the conclusion that the unsatisfactory results in the treatment of this affection are due to the almost seeming impossibility of bringing any active parasiticide into contact with the tinea fungus, Dr. A. J. Harrison (*Brit. Med. Jour.*, Sept. 5) tried to devise some means of reaching the parasite. He thinks he has succeeded, and the report of the following case well illustrates his method:—

"On the 28th of March last year (1884) I admitted such a case (A. C.) into the hospital, and commenced the treatment at once. She was naturally a healthy child, nine years old, rather pale, with clear complexion, and brownish-black hair. Nearly the whole of the head was affected; but here and there she had fairly good masses of hair. These latter, at first, were not cut much shorter. For the first few days No. 1 solution, containing iodide of potassium in liquor potassæ, was applied. Pledgets of lint were dipped in the solution and applied to the head, about one-third of the head being operated upon at a time. I may here remark that, by applying the solution carefully, I very seldom find the potash solution irritate much. If it do, as has happened, a weaker mixture can be tried. Then No 2 solution, containing three grains of mercuric chloride in each ounce of spirits of nitre, was used; and so on, until the whole of the head had been operated upon several times with the two solutions. The scalp and the lower parts of the hair were turned of a yellowish tinge. At the end of a week, hairs were examined microscopically.

"April 8.—Conidia were found in abundance. Glycerine of carbolic acid was applied to the parts not being immediately operated upon, and as the child was looking paler than when she came in, most likely from the confinement in hospital, she was ordered to take some syrup of the phosphate of iron. The hair was now cut shorter, nearly close to the head, and this plan I now always adopt. The treatment, such as I have indicated, with the two solutions, was now persevered with; the conidia became more difficult to detect microscopically, and on May 17, 1884, or fifty days after admission, she was discharged, apparently cured. She continued to attend as

an out-patient for a long time, and I could never find any conidia. The hair grew naturally again, and everything looked well; but towards the end of September the hair began to come off in bald patches, especially at the back of the head, but no evidence of fungus existed. Stimulating applications soon put this all right. I have noticed this falling off of the hair in many cases of tinea, and I do not associate it with my or any treatment. From time to time I have seen her. My last note is that on June 30th last her head showed a luxuriant growth of hair, which was as healthy-looking as possible."

The great feature which he contends for in his plan is that, by softening the hairs with liquor potassæ, the iodide of potassium is conveyed to the very hair-roots and bulbs, the spots where the conidia flourish and germinate in profuse abundance, and hitherto in comparative security. There, whilst the hairs are in a softened condition, the mercury-solution can penetrate, and then, coming into contact with the iodide deeply down, an important chemical action is set up, and biniodide of mercury is formed, just where it is most especially wanted.—(*Med. and Surg. Rep.*)

5. *The Oleates.*—Some stir has lately been made about these compounds, and they have been advocated as possessing special therapeutical virtues. Two of them—viz., oleates of mercury and zinc, have been admitted into the B. P. 1885, but Dr. Shoemaker has endeavoured to introduce into practice a large number of other oleates. A discussion upon their uses recently took place in America, and it may be useful to give concisely the conclusions arrived at by some of the leading dermatologists in that country. Dr. Stelwagon's opinion is that of all the oleates, those of mercury, zinc, bismuth, and lead, have a place in the treatment of diseases of the skin, and in view of their costliness, the seeming unavoidable frequency of badly-made preparations, the disagreeable oleic acid odour, and the irritation frequently observed following their use, it is probable that of these four the mercuric oleate promises to retain a permanent value. This last is especially valuable in ring-worm of the scalp, but for inunctions in the treatment of syphilis it is of doubtful utility, as it is questionable whether it is absorbed. Oleate of copper, which has been so highly recommended for ring-worm of the scalp, is not comparable in that affection to oleate of mercury, or to tar and sulphur preparations.

Dr. Wigglesworth had practically renounced all oleates except the oleates of zinc and lead, and oleate of mercury, as a parasiticide.

Dr. Duhring had employed the oleate of copper in varying strength in thirty or forty obstinate cases of ringworm, but it seemed to exert no influence whatever. As to its efficiency in acuter forms of ringworm, he could not speak.

Dr. Hardaway had almost entirely discarded the oleates. In some recent cases, the oleate of copper seemed to be successful, but in chronic cases it entirely failed.—(*Med. and Surg. Rep.*)

6. *Treatment of Lupus.*—In the clinic of Dr. Schultz (Kreuznach) for skin diseases, patients affected with lupus are treated in the following manner, as we learn from a report published by Dr. Ritter in the *Allg. med. centr. Zeit.* 53, 1884:—

A ten per cent. watery solution of permanganate of potassium is brushed with a camel's hair brush on the diseased skin, until a thin black crust has formed. This procedure is repeated daily or every second day; if the latter, according to the sensitiveness of the patient, either simple cerate or a salve made of one part permanganate of potassium to twenty parts of fat, is employed on the free day. Under this not very painful treatment the nodules are gradually softened, so that the whole lupus tissue can finally be wiped off with cotton. This mode of treatment usually reaches the desired result within from eight to ten weeks, but the course may be greatly shortened by scraping off the diseased epidermis with a sharp spoon. The scars, which form under this procedure, are characterised by their thinness and smoothness. Relapses are rare, and rapidly yield to the same method of treatment, which in lupus erythematodes has been employed with the same uniform success. In cases of universal lupus, besides the local application of permanganate of potassium by aid of the brush, the same remedy is also added to the baths, which the patient receives daily or every second day. Here about two and a half drachms of the drug are added to each bath.

The treatment of lupus at this clinic has gained such a reputation that patients suffering from it come a great distance to be cured, and all are astonished at the rapidity of success and the mildness of the method.—(*Med. and Surg. Rep.*, Dec. 6, 1884.)

7. *Oil of Eucalyptus.*—This essential oil continues to be largely used as an antiperiodic, and it is said to be of especial value in obstinate cases when quinine has been taken over and over again without much benefit. The weight of evidence is undoubtedly in favour of the possession of decided antiperiodic properties by eucalyptus, but it is

not likely to supersede the cinchona alkaloids. The dose is from one to five minims emulsified or mixed with olive oil. Mr. Watson Cheyne uses it in the abortive treatment of gonorrhœa, oil of eucalyptus and iodoform being made into bougies with cacao butter. The best formula is five grains of iodoform and ten minims of oil of eucalyptus in a forty-grain bougie. These rods are four or five inches in length, and about the size of a No. 10 catheter. The following is the mode of application which Mr. Watson Cheyne recommends:—After the patient has passed urine, a bougie is dipped in eucalyptus oil and passed into the urethra, a pad of boracic lint being placed over the orifice, covered with gutta percha, and fastened on by strapping. This is retained for about five hours, when the patient passes water and injects two syringefuls of solution of sulpho-carbolate of zinc—two grains to the ounce of water. This injection is employed six or seven times daily, and is continued for three or four days, and when the acute symptoms have subsided, injections of sulphate of zinc—two grains to the ounce—are substituted. It is advisable at the same time to order diluents and alkalies, to keep the bowels open by salines, and to forbid the use of alcohol. Copaiba is given in half-drachm doses thrice daily from the beginning. The contagiousness of gonorrhœa and the period of incubation point to a parasitic origin. The antiseptics, eucalyptus and iodoform, probably destroy the specific organisms without injuring the already irritated and weakened mucous membrane. The acute inflammation is probably caused by the growth of these organisms in the mucous membrane; with their destruction the inflammation ceases to extend, and the altered tissue tends to return to the normal state.

The antiseptic properties of oil of eucalyptus are of interest in connection with the antiseptic treatment of phthisis. It is now largely used for this purpose, and the results are in many cases strikingly beneficial.

8. *Naphthalin.*—This solid hydrocarbon ($C_{10}H_8$) procured from coal-tar has been known for more than 60 years to chemists, but scarcely attracted attention in practical therapeutics except as an external parasiticide (scabies) until quite lately. It occurs in thin, white, shining crystals, with a strong odour and burning taste, soluble in alcohol, ether, fixed and volatile oils. Naphthalin possesses powerful antiseptic properties, and as it is completely insoluble in water and but sparingly absorbed from the gastro-intestinal tract, and is non-poisonous, it offers advantages over

other antiseptic drugs in regard to local actions within the intestines. Rossbach (*Berlin. klin. Wochensch.* 42, 46, 1884) thinks it the best agent for disinfection of the intestinal contents, and it may be administered without danger, internally, for some weeks, even to the extent of 5 grms. a day. The naphthalin must be *perfectly pure* (washed with alcohol), and the dose to commence with is 0·1 to 0·5 grm. (7 grs.) rubbed up with an equal weight of sugar and flavoured with oil of bergamot. It may be taken in wafers or oblates. Dose for children, ½ gr. to 2 gr. It renders the fæces inodorous, and Rossbach employs it with benefit in various forms of diarrhœa and of intestinal catarrh, with or without ulceration. [I have found it serviceable in arresting fœtor in a case of malignant disease of large intestine.—W. G. S.]

But as some of the naphthalin is absorbed and is eliminated in the urine partly as naphthalin and partly as *α*-naphthol, it likewise proves useful in checking and hindering vesical fermentation, so that in from one to two days the micrococci disappear from the urine, in cases of catarrh of the bladder. Dr. Custing (U.S.) confirms its value in cases of cystitis with ammoniacal urine. He gave 2 grs. in wafers or capsules. Pauli (*Berl. klin. Wochensch.*) endorses Rossbach's recommendation, and he has used naphthalin with advantage in enteric affections of children under five years of age. Schwarz, Ewald, and Lehmann add their favourable testimony as to its value in overcoming fæcal odour. Slight urinary irritation is occasionally produced, and the urine is darkened in colour. Binz considers that naphthalin has established its place as a remedy of approved value in putrid states of the contents of the bowels.

Drs. Jatzuta and Dovodtchikoff highly eulogise naphthalin as an application to ulcers.—(*Lond. Med. Rec.*, Nov., 1884, Aug., 1885).

9. *Medicated Pastes.*—Professor Unna, to avoid the greasiness and reduce the cost of ointments, has suggested the use of kaolin or porcelain clay as a basis. The paste should be quickly and easily spread in a thin layer on the skin, and should form in a short time a firmly adhering coating.

Pure kaolin, with vaseline or glycerin in equal parts ; with oils, such as olive, almond, or linseed, in the proportion of two to one, will produce a good paste. With more linseed a liniment is produced. This, when spread on extensive surfaces, leaves a quickly-drying residuum. When other ingredients, such as lead acetate or zinc oxide, are used, the kaolin and oil or glycerin are to be mixed

first, and the lead or zinc added, as the kaolin is otherwise apt to form an insoluble cement with the metallic salt. Yellow or red kaolin may be used in place of white, and these pastes may not only be used in the treatment of certain diseases of the skin, but also as vehicles for escharotic agents.

The following formula is suggested:—

Pure kaolin,	
Linseed oil (or glycerin), of each, - - -	30 parts.
Oxide of zinc,	
Solut. of subacctate of lead, of each, - -	20 „

—(*Edinb. Med. Journ.*, from *Monat. f. prak. Derm.*)

Professor Unna, in his experiments with kaolin pastes, found that other forms of paste might be used to advantage, as for example:—

Lead Pastes.—Boil a quantity of litharge with double the quantity of vinegar, until the latter has evaporated and the litharge has become a moderately damp mass. Should the paste in time become dry it can be restored by heating it with more vinegar, or—

Lithargyri subt. pulv., - - - -	50 parts.
Aceti, - - - - - - - -	80 „

Boil to the oonsistency of a paste and add—

Ol. lini. (*vel* glycerin., *vel* ol. olivæ), - -	10 parts.

Starch Pastes.—Useful in eczema. In this case the property of drying must be imparted to the paste by the addition of oxide of zinc, sulphur, &c.

Zinci oxidi, - - - - - - -	50 parts.
Acid. salicylici, - - - - - - -	2 „
Amyli oryzæ, - - - - - - -	15 „
Glycerini, - - - - - - - -	15 „
Aq. destillat., - - - - - - -	75 „

Mix simultaneously, and heat until reduced to 140 parts.

A similar paste for acne consists of—

Sulphuris præcip., - - - - -	40 parts.
Calcii carbonat., - - - - - - -	2 „
Zinci oxidi, - - - - - - -	20 „
Amyli oryzæ, - - - - - - -	15 „
Glycerini, - - - - - - - -	20 „
Aq. destillat., - - - - - - -	75 „

M. Reduce by boiling to 120 parts.

Gum pastes (for chronic infantile eczema).

Zinci oxidi,		40 parts.
Hydr. oxidi rubri,		2 „
Mucilag. acaciæ,		
Glycerini,	āā	20 „

M. secundum artem.

Cretæ præparat.,		
Sulphuris sublim.,	āā	2 parts.
Picis liquidæ,		8 „
Amyli,		20 „
Mucilag. acaciæ,		
Glycerini,	āā	15 „

For sore nipples:—

Sacchari albi,		
Zinci oxidi,		
Mucilag. acaciæ,		
Glycerini	āā	5 parts.

M.

The gum pastes will serve also as vehicles for chrysarobin and pyrogallic acid and oily substances, but cannot be employed for acids, since these destroy their adhesiveness. Kaolin paste can also be used for chrysarobin and pyrogallic acids.

Attempts to form pastes which can be kept in bulk ready prepared have thus far been unsuccessful. Even oil or glycerin fails to prevent their hardening in time, and as the best pastes are those which dry the most rapidly when applied to the skin, these are the ones which are soonest spoiled by keeping. Corrosive sublimate, calomel, red and white precipitate, naphthol, carbolic acid, chloral hydrate, and camphor may be combined with any of the above formulas. Salicylic acid mixes well with all the pastes, excepting in large proportions with gum paste. Iodine and iodoform are compatible with the lead, kaolin, and gum pastes, but not with the others. Animal, vegetable, and mineral fats and soaps can be mixed in small quantities with all the pastes.—(*Pharm. Journ.*)

10. *On Certain New Methods in the Treatment of Diseases of the Skin.*—Dr. G. Thin writes as follows (*Brit. Med. Journ.*, 1884):—Several new methods of applying medicinal substances to diseased skin, which have been introduced into practice by foreign dermatologists during the last few years, deserve to be more widely known by English practitioners than is at present the case.

In the *Monatshefte für praktische Dermatologie*, Vol. II., No. 4. Oscar Lassar recommends for certain eczemas the use of paste instead of ointment. All practitioners who see much of eczemas meet with cases in which the soothing effects of an ointment are much to be desired, but in which ointments of the most soothing kind cannot be borne. Occasionally, for example, zinc ointment, which is so largely used in this country, produces great irritation, and increases the inflammatory condition. For such cases, Lassar recommends a paste formed by slowly triturating vaseline with equal parts of oxide of zinc and starch. The paste thus formed differs from an ointment in being porous. It does not dissolve at the temperature of the skin, quickly dries on the part, and when a little powder is sprinkled over it, remains adherent. The discharge from the skin, instead of being confined by an impermeable ointment, passes through the paste, which thus protects the inflamed organ from its irritating or decomposing secretions.

The beneficial action of salicylic acid in eczema is now well established, and Lassar's paste forms a convenient vehicle for it. It is used in a strength of 2 per cent. For a salicylic ointment, in the eczema capitis of children, Lassar's formula is: ℞ Acid. salicyl. 1; tinct. benzoin, 2; vaselin., 50. M. Fiat unguentum. After the crusts are removed (conveniently done by softening with 2 per cent. salicylic oil), the scalp is rubbed with the ointment twice or thrice daily with the best results.

Therapeutically, pastes occupy an intermediate position between powders and ointments, and their use is attended with special advantage, not only in cases in which ointments are badly borne, but in eczema of those parts of the body, such as the anal region and the axilla, where it is difficult to keep ointments properly applied. With Lassar's paste as a basis, any of the substances ordinarily incorporated with fats may be used.

Notwithstanding the incontestable success of the treatment of psoriasis by chrysarobin (chrysophanic acid), the inconvenience attending its use, as it is ordinarily employed, has led to its being much less prescribed than its curative action warrants. The indelible staining of linen, in particular, renders it a very unpopular remedy with most patients. To overcome these disadvantages, Pick specially recommends the use of chrysarobin gelatine in the treatment of psoriasis.

Auspitz conceived the idea of substituting for gelatine a solution of one part of purified gutta-percha in ten parts of chloroform. The

solution he calls *traumaticin*. This preparation adheres perfectly to the skin, and may remain unchanged from two to three days. It forms a coating thinner and more delicate than collodion or gelatine. By itself it is perfectly neutral to the skin, provoking no irritation.

Both traumaticin and gelatine—but the former more than the latter—exercise a certain amount of compression on the skin, and both may be applied to large portions of the body. Whilst the gelatine requires to be softened each time that it is used, traumaticin is always ready for immediate use, and remains free from the development of fungi; whilst, as is well known, gelatine, if not rendered aseptic by the addition of some such substance as salicylic acid, forms a fertile soil for these growths.

In the treatment of psoriasis, Auspitz uses chrysarobin with traumaticin in the proportion of ten per cent. If the affection be very limited, a fresh application is made each day; but if a large extent of surface be involved, it is renewed once in two or three days. As in the case of the gelatine, the removal of the scales from the psoriatic patches is facilitated by the use of soft soap. In twelve cases published by Auspitz, the duration of the treatment only lasted from five to twelve days; and in one half of the cases it did not exceed seven days. Besnier (*Annales de Dermatologie et de Syphiligraphie*, Vol. V., No. 1, Paris), who remarks that his experiences with the medicated gelatines of Unna and Pick had not been so encouraging as he had anticipated, expresses himself very favourably regarding the combination of gutta-percha and chrysarobin recommended by Auspitz. The method, however, was modified by him, in use, as follows. After having removed the scales from the patches, he brushes over the surface with a mixture of chloroform aud chrysarobin in the proportion of 15 per cent. of the latter. In a few minutes after the chloroform is evaporated, the patch is infiltrated with pure chrysarobin; then with a large flat brush he applies a thick layer of traumaticin over and beyond the edge of the patch. The advantages claimed for this mode of application are—greater solidity of the coating, and the possibiltiy of proportioning more exactly the energy with which the chrysarobin is applied to the patch to the degree of infiltration present.

But, in my opinion, surpassing in general utility the newer methods which I have just described, is the application to the skin of ointments prepared on muslin, as introduced by Unna, and described by him, in 1880, in the *Berlin. klin. Wochenschrift*,

No 35. "Der Salbenmull Verband: ein Beitrag zur Behandlung des Ekzems."

There is no doubt that the unsatisfactory results of much of the treatment of eczema by ointments, is due to the difficulty which is experienced in getting the affected skin well covered with the unctuous application which is prescribed. To overcome this difficulty, Unna conceived the idea of incorporating stout unstarched muslin with a thick layer of ointment. As a basis for the ointment mutton fat seemed to him to be the most useful. This muslin ointment, when closely applied and bound on the skin, secures, in Unna's words, "absolute rest to the integument, prevents rubbing by clothes, and excludes the atmospheric air." These muslin ointments are prepared spread on one or both sides of the muslin, and consist of a large variety—amongst them being representatives of nearly all the ointments that are in use in the treatment of skin-diseases. To their great utility I can very strongly testify.

As, so far as I know, muslin ointments are at present only made in Hamburg, and patients cannot get them without incurring delay and trouble, I have not prescribed them in many cases in which I should have otherwise done so. In cases, however, in which the expected benefit from ordinary ointments was not derived, I have found the muslin ointments, supplied by Beiersdorf, successful.[a] For example, in the case of a young boy who was afflicted with frequent outbreaks of papular and pustular eczema over large portions of the body, necessitating the frequent use of soothing ointments, the difficulty of keeping zinc ointment properly in contact with so large an extent of surface, in the active and restless patient, was found to be a great drawback, and the result of the treatment was, consequently, unsatisfactory. I bethought me of Beiersdorf's muslin-zinc-ointment, and its application was not only found simple and convenient by his nurse, but healed the eczematous eruption much more rapidly than had been the case when ordinary zinc ointment had been applied in the usual way. This better result was no doubt due simply to the fact that the muslin-ointment afforded a more complete covering to the skin than zinc ointment did when it was spread on lint or linen by the nurse. The physical consistence of

[a] Herr Beiersdorf, Apotheker, Altona, Wohlers Allée No. 40 (Hamburg). The subject is well worthy the attention of pharmaceutists in England. Patients speak with so much approval of the convenience of prepared muslin ointments, that I believe they will pass, eventually, into general use.

these muslin ointments surpasses in applicability that of any ointment spread for the occasion on cloth.

Another of Herr Beiersdorf's preparations—a muslin gutta-percha salicylic plaster—I can recommend with the warmest approval. I do not know how these plasters are prepared, nor do I know whether Dr. Unna (to whose practical ingenuity we are indebted for the idea, and through whose writings they were brought before the profession) has published the formula by which they are made.

To the action of these plasters in removing hard horny masses of epidermis from the soles of the feet and from the palms of the hands, I have already borne testimony in a paper read before the Clinical Society of London. On their value in the treatment of scaly eczemas, more especially of the troublesome forms to which some people are liable on the fingers, I may now insist.

The curative action of salicylic acid in eczema is, of course, well known. The advantage of applying the remedy in the form of an adhesive plaster is very great. A piece of the plaster of the size of the affected part, is closely applied to the diseased skin, and firmly fixed in its place by a few turns of a good adhesive plaster.[a]

It is left untouched for a couple of days, when it is again renewed by the patient. The salicylic acid exercises its full action, and the patient is almost unconscious of the remedy. Herr Beiersdorf prepares the plaster with various percentages of salicylic acid. His catalogue refers to a thirty-eight and a fifty per cent. strength of salicylic acid. I generally use the weaker; but in two obstinate cases of old infiltrated horny eczema in which the weaker strength had been first used, I found a markedly increased effect by the use of the stronger plaster.

11. *Phenol-Camphor.*—Dr. Theodore Schäffer (*Peoria Medical Monthly*, Jan., 1885) noticed in 1882 the important fact that when common or Japan camphor and crystallised carbolic acid are mixed together and subjected to heat, a colourless liquid is the result. This reaction seems to have attracted but little attention, though Dr. Squibb alluded to it in the *Ephemeris*.

[a] The adhesive plaster which I use for this purpose is sold in boxes under the German name of *Heftband*. As it is very adhesive to itself, and only moderately adhesive to the skin, it has special advantages over the ordinary forms of adhesive plaster. When wrapped round a limb or finger, all that is necessary to fix it securely in its place is that the one roll should overlap the other. It can be applied with great rapidity and certainty, and is particularly useful in bandaging parts of the body where an ordinary bandage could with difficulty be retained in its place.

Phenol-camphor is best obtained by heating crystallised carbolic acid (phenol) until it fuses, and then gradually adding camphor; a clear liquid is obtained which is characteristic on account of its permanency. In preparing this substance the writer uses equal parts of camphor and carbolic acid. It remains liquid for an indefinite time, and does not solidify on being subjected to the low temperature of a frigorific mixture of snow and sodium chloride. Phenol-camphor [$C_8H_{11}O$ (?)] is a colourless, refractive liquid, possessing the fragrant odour of camphor, entirely extinguishing the one of carbolic acid, and has a sweetish, camphoraceous, but biting taste, not as caustic as that of carbolic acid, somewhat benumbing the tongue. It is soluble in alcohol, ether, chloroform and ethereal oils, but is insoluble in glycerin and water, being heavier than the latter. When ignited it burns with a smoky flame. There is reason to believe that this is a chemical compound. Dr. Schäffer has used phenol-camphor as a local anæsthetic in toothache, introducing it on cotton into the cavity of a carious tooth, with good success; and can speak of it favourably as a local anæsthetic in the ingrowing of the toe-nails. He has used it also in combination in certain eruptions due to cryptogamic causes. This substance can be likewise used as antiseptic. It mixes well with paraffin, cosmoline, and a number of oils. In impregnating cotton gauze (antiseptic gauze), phenol-camphor may be used as a substitute for carbolic acid. Phenol-camphor is less irritating, less caustic than carbolic acid, and has also the advantage of possessing a pleasant odour.—(*Therap. Gaz.*, April, 1885.)

THE TREATMENT OF HÆMORRHOIDS BY INJECTION.

In an instructive clinical paper in *The American Journal of the Medical Sciences*, Dr. Charles B. Kelsey, of New York, urges the treatment of hæmorrhoids by injection of carbolic acid. After an ample experience this has become his routine practice, and in all his cases he has never known a patient to abandon the treatment after it was begun, and he has never failed to effect a perfectly satisfactory cure by it, and he has never had an accident of serious nature with it. He uses three solutions, one of 15 per cent., one of 33 per cent., one of 50 per cent., and sometimes he used the pure acid. In a severe case he begins with the stronger ones, in a mild case with the weaker.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

Vital Statistics

Of the Eight Largest Towns in Ireland, for four Weeks ending Saturday, November 7, 1885.

Towns	Population in 1885	Births Registered	Deaths Registered			Deaths from Seven Zymotic Diseases							Deaths from Phthisis	Death-rate per 1,000	
			Total Number	Under 1 year	At 60 years and upwards	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa		From all causes	From seven Zymotics
Dublin,	353,082	678	638	116	154	–	1	8	2	12	18	8	73	23·6	1·8
Belfast,	219,222	501	338	92	44	–	6	11	1	5	5	16	44	20·1	2·6
Cork,	80,124	138	119	16	26	–	1	7	–	2	2	4	10	19·3	2·6
Limerick,	38,562	79	62	10	17	–	–	1	–	1	1	–	9	20·9	1·0
Derry,	29,162	66	49	4	13	–	–	–	–	3	–	–	5	21·9	1·4
Waterford,	22,457	53	38	9	12	–	–	–	–	–	–	–	4	22·0	—
Galway,	15,471	25	13	1	6	–	–	–	–	–	–	–	–	10·9	—
Newry,	14,808	28	21	–	8	–	1	–	–	–	–	–	1	18·5	0·9

Remarks.

In the eight selected towns included in the foregoing Table the highest death-rates are 23·6 per 1,000 of the population annually in Dublin, 22·0 in Waterford, 21·9 in Londonderry, and 20·9 in Limerick; the lowest rates are 10·9 in Galway, 18·5 in Newry, 19·3 in Cork, and 20·1 in Belfast. The rate of mortality from seven chief zymotics ranged from 2·6 per 1,000 per annum in Belfast and Cork, 1·8 in Dublin, 1·4 in Londonderry, 1·0 in Limerick, and 0·9 in Newry, to *nil* in Galway and Waterford.

The recorded deaths represent a rate per 1,000 of the population annually of 18·5 in twenty-eight large English towns (including London, in which the rate was 18·1), 20·8 in the sixteen chief towns of Ireland,

23·1 in Glasgow, and 16·2 in Edinburgh. With the advancing autumn, there is a marked increase (from 17·1 to 18·5) in the mortality in the English towns generally; in London it has risen even more decidedly, namely, from 15·6 to 18·1 per 1,000 per annum. The mortality in the metropolis was each week 17·2, 18·6, 17·5, and 19·0 per 1,000 per annum respectively. The death-rate rose decidedly in Glasgow (from 19·1 to 23·1). In Edinburgh it rose also (from 14·7 to 16·2). In the Irish towns the rate of mortality has once more fallen, but again very slightly, from 21·0 to 20·8. If the deaths (numbering 15) of persons admitted into public institutions from localities outside the Dublin Registration District are deducted, the death-rate of that district becomes 23·0, while that of the portion of the district included within the municipal boundary is 25·6 per 1,000 per annum. In London the mortality from smallpox appears to be diminishing—the deaths were only 14 compared with 29, 29, 63, 105, 193, 239, 179, 109, 197, and 229 in the ten preceding periods of four weeks each. The weekly number of deaths from this disease since the beginning of the year have been 56, 42, 70, 58, 59, 60, 56, 44, 37, 27, 35, 23, 24, 39, 40, 49, 51, 48, 66, 75, 50, 55, 62, 39, 37, 28, 39, 13, 15, 18, 16, 14, 15, 5, 9, 6, 9, 8, 11, 7, 3, 0, 0, 9, and 5 respectively. The deaths from diarrhœal diseases in the same city, which numbered 54, 51, 52, 78, 415, 1,163, 429, and 166 in the eight preceding periods of four weeks each, were only 73.

Acute febrile zymotics were returned as the cause of death in 64 instances in the Dublin district, compared with a ten-years' average of 110·6 in the corresponding period and 74 in the previous four weeks. The 64 deaths included 1 from measles, 8 from scarlet fever, 18 from "fever," 12 from whooping-cough, 8 from diarrhœal diseases, and 2 from diphtheria. There was no death from smallpox. The fatality of scarlet fever shows a satisfactory decrease, the deaths being 5 less than in the previous four weeks. Of the 18 deaths referred to "fever," one only was ascribed to typhus, while 15 were attributed to enteric fever, and in 2 instances the exact nature of the fever was either not specified or was ill defined. The deaths from fever were 4 more than those registered (14) in the previous four weeks. Four children aged between one and five years succumbed to scarlet fever, and one victim to this disease was under one year old. The deaths from whooping-cough rose from 7 in the previous four weeks to 12. Of the 12 victims of this disease, 5 were between one and five years of age, and 6 were infants of less than twelve months old. The single victim of measles was a child aged between 1 and 5 years. Three deaths from cerebro-spinal fever were registered in the two first weeks of the period—one in Rathmines, one in Kingstown, and one in No. 3 South City (Peter-street) District.

Measles again caused but six deaths in Belfast, compared with 6, 7, 38, 88, and 162 in the five preceding periods.

Scarlet fever was fatal in 11 instances in Belfast, and in 7 cases in Cork. Diarrhœal diseases were credited with only 28 deaths in the eight towns, compared with 56, 96, 68, 30, 32, 27, and 18 in the seven previous periods of four weeks. In London the weekly registered deaths from diarrhœal diseases were 27, 21, 17, and 8 respectively.

In the Dublin Registration District 678 births and 638 deaths were registered, compared with 782 births and 590 deaths in the previous four weeks. The births were those of 325 boys and 353 girls. The deaths of infants under one year were 116 against 133 in the previous four weeks; those of persons aged 60 years and upwards were 154, compared with 139 in the previous period.

The deaths referred to pulmonary consumption in the eight towns were 146, compared with 156, 197, 209, 213, 243, 277, 252, 270, 244, and 239 in the ten preceding periods of four weeks' each. In Dublin diseases of the respiratory organs are stated to have caused 142 deaths, against an average of 126·5 in the corresponding four weeks of the previous ten years, and compared with 96, 98, 65, 117, 120, 171, 207, 246, 225, and 213 in the ten preceding periods of four weeks each. The 142 deaths included 79 from bronchitis (average = 84·5) and 30 from pneumonia (average = 19·9). Of the 79 persons who succumbed to bronchitis, 11 were infants under twelve months, whereas no fewer than 28 had passed their sixtieth year. The continued prevalence and fatality of diseases of the respiratory organs depended on the cold, broken weather, which so eminently characterised the present season up to the beginning of November.

On Saturday, November 7, 1885, there were under treatment in the principal Dublin hospitals no cases of smallpox, 1 case of measles, 37 cases of scarlet fever, only 8 of typhus, 25 of enteric fever, and 14 of pneumonia.

The mean temperature of the four weeks was 45·1° in Dublin, 45·3° in Belfast, 47·4° at Roche's Point, Co. Cork, 43·1° in Edinburgh, and 44·8° at Greenwich. The minimal readings of the thermometer in the screen were 33·2° in Dublin, 33° in Belfast, 37° at Cork, 27·4° in Edinburgh, and 31·5° at Greenwich. The maximal temperatures were 62·1° in Dublin, 57° in Belfast, 58° at Cork, 60·8° in Edinburgh, and 59·4° at Greenwich. The returns from Glasgow for the first week of the period are wanting, but the temperature in that city fell to 22·0° in the third week and rose to 58·5° in the fourth week.

It will be noticed that the mean temperature was considerably below the average at all stations during the first three weeks; but in the last week a remarkable wave of warmth passed over Ireland and Scotland, while the weather remained rather cold in the south-east of England.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of October, 1885.

Mean Height of Barometer,	29·773 inches.
Maximal Height of Barometer (on 15th at 9 p.m.)	30·288 „
Minimal Height of Barometer (on 26th, at 4 a.m.),	29·044 „
Mean Dry-bulb Temperature,	44·8°.
Mean Wet-bulb Temperature,	43·1°.
Mean Dew-point Temperature,	41·1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·260 inch.
Mean Humidity,	87·5 per cent.
Highest Temperature in Shade (on 2nd),	57·1°.
Lowest Temperature in Shade (on 25th),	33·2°.
Lowest Temperature on Grass (Radiation) (on 25th),	28·6°.
Mean Amount of Cloud,	56·8 per cent.
Rainfall (on 22 days),	3·500 inches.
Greatest Daily Rainfall (on 6th),	·994 inch.
General Direction of Wind,	N.W.

Remarks.

A very cold, unsettled and rainy month, polar winds predominating largely; frequent hail showers, and in Scotland sleet and snow. The month was specially memorable for the number and depth of depressions, which travelled eastwards across the southern portion of the British Islands or up the English Channel, usually as secondaries or subsidiaries to still more extensive areas of low pressure in the far North. Hence it came about that the weather was more broken and the rainfall was heavier and more persistent in the south than in the north—indeed Scotland enjoyed comparatively fine weather, even if it was very cold for the time of year.

The mean height of the barometer was 29·773 inches, or 0·074 inch below the average value for September—namely, 29·847 inches. The mercury rose to 30·288 inches at 9 p.m. of the 15th, and sank to 29·044 inches at 4 a.m. of the 26th. The observed range of atmospherical pressure was, therefore, 1·244 inches—slightly less than an inch and a quarter. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 44·8°, or 8·5° below the value for September, 1885; that calculated by Kaemtz's formula—viz., *min.* + (*max.* − *min.* × ·41) = *Mean Temp.*—from the means of the daily maxima and minima was 44·6°, or 4·6° below the average mean temperature for October, calculated in the same way, in the twenty years, 1865–84, inclusive (49·2°). The arithmetical mean of the maximal and minimal readings was 45·5°. On the 2nd the thermometers in the screen rose to 57·1°—wind S.W.; on the 25th they fell to 33·2°—wind

calm. The minimum on the grass was 28·6° on the 25th. The past month was extremely cold, but not quite so cold as October of 1880 (M. T. = 44·5°), which was the coldest October in the twenty years 1865–84. The rainfall was 3·500 inches, distributed over as many as 22 days. The average rainfall for October in the twenty years, 1865–84, inclusive, was 3·025 inches, and the average number of rainy days was 17·2. The rainfall, therefore, and the rainy days were decidedly above the average.

There was hail on the 8th, 10th, 11th, 12th, 13th, 23rd, and 27th. Lightning was seen on the 12th, and thunder was heard at 8 25 a.m. of the 23rd. A lunar halo was visible on the 20th. The atmosphere was foggy on the 17th, 18th, 19th, 23rd, and 25th.

The month opened with the centre of an extensive and deep depression (28·80 inches) lying between the Shetlands and the Farŏe Islands. In Dublin the weather on the 1st was chiefly fine, but a S.W. gale prevailed on the 2nd.

The weekly record for the 4th to the 11th was once more one of unsettled, cold, and rainy weather, with squally, variable winds. During the period atmospherical pressure was very low to the northward, while important subsidiary depressions travelled eastwards across the United Kingdom. Paraselenæ were seen in Dublin at 4 p.m. of the 5th. Next day a deep depression formed over Ireland, whence it travelled eastwards so rapidly that its centre reached Copenhagen at 8 a.m. of the 7th, having passed over Dublin at 4 p.m., and Liverpool at 6 p.m., of the 6th. Torrents of rain fell along the track of the centre—·994 inch being measured in Dublin, and 1·10 inches at Loughborough in Leicestershire. By 8 a.m. of Saturday, the 10th, the barometer was down to 28·80 inches in Dorsetshire as another disturbance passed eastwards. Early on this morning rain and hail fell in large quantities in Dublin.

In the week ending Saturday, the 17th, the weather was at first very cold, but finer and drier than of late, although cold showers of sleety rain and hail fell at times. After the 14th it was milder, but very changeable—a fall of rain and a gale from E.N.E. prevailing on Friday, the 16th, and a dense vapour fog forming next morning. During this period two principal depressions were observed—the first travelled slowly southwards from the north of Denmark to the east and south-east of England, causing very bad weather in those parts; the latter showed itself over the Gulf of Genoa, whence it travelled across France towards N.W., reaching Brittany on the morning of the 16th, and finally passing out over the Atlantic to the southward of Ireland.

At first cloudy, but fine and quiet, in the third week, the weather again fell into an unsettled, showery state on the 21st, and continued so until Saturday, the 24th, which was a sunny, pleasant day, although cold. In the earlier period the atmospherical pressure was high o

gradients were slight in the British Isles; in the latter period the weather was ruled by depressions which travelled slowly across the S. of Ireland, England, and the English Channel. On the morning of the 23rd heavy showers of rain and hail fell in Dublin, where thunder was heard at 8 25 a.m. Until the 24th calm, clear weather held in Scotland, where severe frost occurred—the minima at Nairn about this time being 33°, 27°, 21°, 24°, 20°, and 23°.

Throughout the last week, ending on Saturday, the 31st, conditions were cyclonic and the weather was very unsettled, cold, and rainy. From the evening of Sunday, the 25th, until the following Wednesday afternoon the barometer was extremely low in Scotland and the south of Scandinavia, and a temporary and rapid increase of pressure on the 29th was quickly followed by a new depression next day, under the influence of which the weather remained until the close of the week. At 8 a.m. of the 26th, the centre of an extensive depression lay between Caithness and the Shetlands, in which region the barometer was down to 28·7 inches. It is needless to say that broken weather prevailed throughout the United Kingdom. On the following morning this depression reached the Skager Rack, while another equally deep had advanced to the Shetlands. Strong W. or N.W. winds and hail squalls occurred generally on this and the following day, when both depressions were found nearly in the same position, but in process of filling up. During the night of the 28th the disturbances travelled south-eastwards to the Continent, and the barometer rose rapidly in the British Isles. A low pressure system finally passed eastward between two areas of high pressure—one over Norway, the other over France. In its wake, northerly winds again sprang up, and the last day of the month was cold and showery.

PERISCOPE.

ASPIRATION OF THE AORTA.

In the September issue of the *Bristol Medico-Chirurgical Journal*, Mr. Dacre, House Physician of the Bristol Royal Infirmary, reports a case of sudden pulmonary congestion relieved by aspiration of the aorta. The patient was *in extremis*, and as there was no apparent systole of the heart, and no distension of superficial veins, it was determined to relieve the venous engorgement of the lungs and right heart by tapping the right auricle itself. Thirty ounces of dark-coloured blood were then withdrawn, with great relief to the patient. In about six hours afterwards, however, his condition became again very serious. The aspiration was repeated, and sixteen ounces of venous blood were withdrawn, but although the pulse rose for a few minutes it again rapidly failed, and he died. At the *post mortem* examination it was found that the needle had

passed immediately above the right auricular appendix, and had pierced the anterior surface of the aorta about ¼ inch above one of the semi-lunar valves. The pericardium contained about 2 oz. of blood, but there was no extravasation around either puncture. A plea in defence of the operation of aspirating the right side of the heart, as originally proposed by Dr. Westbury, and performed by him in one case, has been made by Dr. Leuf, also of Brooklyn, in the *American Journal of the Medical Sciences* for January, 1885. Dr. Westbrook devised the operation (cardicentesis) as a means of relieving intense pulmonary congestions. In his case he, as well as Mr. Dacre, penetrated the aorta instead of the right auricle. Dr. Westbrook inserted the needle in the right third interspace, close to the sternum. Mr. Dacre chose the fourth space, but instead of turning the point of the needle inwards under the sternum, as he did when it had entered the chest, he now recommended that the needle should be passed directly backwards; as in that position he has since found it almost invariably pierces the right auricle. Palliation was the most that could have been expected in Mr. Dacre's case, and that certainly was obtained, for the man was granted a respite of at least six hours, the circulation was resumed, and the mental faculties regained—a fact which in some cases might be of the utmost importance. At present such radical treatment could be considered justifiable only as a last resource; but if in such cases results are found to be satisfactory, it will, at any rate, then be a question whether the operation may not be admissible before the patient is absolutely *in articulo mortis*, and quite as justifiable as tapping the pericardium, aspirating the pleural cavity, or draining a cavity in the lung.

NOTE.

We have received from a valued correspondent a letter drawing attention to certain inaccuracies in the Memorial Notice of the late Mr. F. W. Warren, which appeared in the November number of the Journal, as to the circumstances attending the non-election of that gentleman to the Physicianship of Steevens' Hospital.

It has never been the custom to insert letters in the columns of this Journal, and we regret, therefore, that we cannot publish our correspondent's communication—more particularly as if we did so we might give rise to a controversy which could not fail to wound the feelings of Mr. Warren's many friends, among whom both our correspondent and we are pleased to include ourselves.

THE EDITORS.

INDEX

TO THE EIGHTIETH VOLUME.

Abdominal tumours, exploratory incisions in the diagnosis of, 224.
Abercrombie, Dr. John, guide to medical jurisprudence, *Rev.*, 234.
Abraham, Mr. P. C., sarcoma of the jaw, 346—tubercle of the tonsils, 346.
Academy of Medicine in Ireland, transactions of the, 67, 155, 256, 330.
Address, introductory, by Dr. Foot, 386.
Adipocère, 417.
Adulteration of food and drugs in Dublin, Sir C. A. Cameron on, 155.
Alcoholic dyspepsia, 436.
Alcoholic paralysis, 94.
Alcoholism, pilocarpin in, 423.
Anæsthesia, cocain, prolongation of, 436.
Anatomical knowledge of Irish surgeons, by Sir C. A. Cameron, 453.
Anatomy and physiology—sub-section of, Academy of Medicine in Ireland, 67, 256—of the nervous system, report on, 147.
Aneurysm, dissecting, of skeleton, Dr. J. Magee Finny on, 159, 276—Mr. MacMullen on, 424.
Antipyrin, 93.
Aorta—thoracic, dissecting aneurysm of, Dr. Finny on, 159, 276—Mr. MacMullen on, 424—aspiration of the, 524.
Arsenic, bromide of, in diabetes. 255.
Arthritis from peripheral nerve lesions, by Mr. M'Ardle, 398.
Artificial fluid tympanic membrane in chronic otorrhœa, 176.
Artisans and labourers in Ireland, house accommodation of, Dr. Grimshaw on, 7.
Ashhurst, Dr. John, jun., International Encyclopædia of Surgery, *Rev.*, 48.
Aspiration of the aorta, 524.
Atkins, Dr. Ringrose, half yearly report on nervous and mental disease, 143, 238.
Aural dyscrasia, basic, Dr. R. T. Cooper on, 25, 120.

Bacilli and pulmonary phthisis, Dr. Gabbett on, 376.
Ball, Dr. C. B., tar cancer, 85.
Barton, Dr. J. K., surgery of the knee-joint, 166.
Basic aural dyscrasia, by Dr. Robert T. Cooper, 25, 120.
Beck, Mr. Marcus, Erichsen's surgery, *Rev.*. 41.
Belladonna to produce toleration of iodide of potassium, 348.
Bennett, Professor E. H., method of exhibiting the alternation of the sectors of the crystalline lens, 67.
Bewley, Mr. Henry T., changes in skin in some forms of disease, 185, 305.
Biliary calculi, 86.
Blood of the insane, 418.
Bodenhamer, Dr. William, hæmorrhoidal disease, *Rev.*, 412.
British pharmacopœia, 1885, *Rev.*, 317.
Bromide of arsenic in diabetes, 255.
Brooks, Dr., anomalous coronary branch arising from pulmonary artery, 69—vena azygos major ascending on the left side, 70—anomalous coronary artery of the heart, 257.
Broomfield, Mr., patent foramen ovale, 67.
Browne, Mr. Oswald, aneurysms of the aorta, *Rev.*, 228.
Bruce, Dr. J. Mitchell, materia medica and therapeutics, *Rev.*, 227.
Brunton, Dr. T. Lauder, text-book of pharmacology, *Rev.*, 37.
Bulkley, Dr. L. Duncan, eczema and its management, *Rev.*, 237.
Burdett, Mr. Henry C., helps to health, *Rev.*, 408.

Cadaveric lesions of the nervous centres, 417.
Calcium chloride, therapeutical value of, 316.
Cameron, Sir Charles A., results of the application of the laws relating to adulteration of food and drugs in Dublin, 155—Anatomical knowledge of Irish surgeons, 453.
Castor oil in psoriasis, 437.

Chin reflex, 154.
Cholera, works on, *Rev.*, 40, 140.
Chromatology, works on, *Rev.*, 230.
Chrysarobin pigment for psoriasis, 355.
Clinical records, 424.
Coca and cocain, 506.
Cocain anæsthesia, prolongation of, 436.
Collins, Mr. Louis, the Advertisers' Guardian, *Rev.*, 326.
Contrexéville and Royat-les-Bains, by Dr. Cruise, 97, 260.
Cooper, Dr. Robert T., basic aural dyscrasia, 25, 120.
Corfield, Dr. W. H., dwellinghouses, *Rev.*, 500.
Cornish, Hon. Surgeon-General, address on cholera inquiry, *Rev.*, 40.
Cornutin, 505.
Creighton, Dr. Charles, Hirsch's handbook of geographical and historical pathology, *Rev.*, 229.
Cremation, 415.
Cripps, Mr. Harrison, diseases of rectum and anus, *Rev.*, 412.
Cruise, Dr. F. R., notes of visits to Contrexéville and Royat-les-Bains, 97, 260.
Cunningham, Dr D. J., musculus sternalis in anencephalous fœtus, 69—description of Andaman skeleton, 71—frozen sections illustrating colotomy, 256—comparative anatomy of the chimpanzee, 256—hermaphroditism in the goat, 258—interesting anomalies, 259.
Cystitis, artificial vesico-vaginal fistula for the cure of, Dr. Macan, 265, 273.

Davy, Dr. Henry, tetanus infantum successfully treated, 220.
Diabetes mellitus, bromide of arsenic in, 255.
Diphtheria, use of iodine in, 272.
Diseases—of women, report on, by Dr. W. J. Smyly, 53—infectious, compulsory notification of, 332—of the skin, Dr. Bewley on, 185, 305—of the skin, works on, 327—of the skin, spraying in, 355.
Dissecting aneurysm of skeleton, Dr. J. Magee Finny on, 159, 276.
Donnelly, Mr. M. A., tapeworm, 347.
Dublin, pneumonia in, Dr. James Little on, 74, 177.
Dyscrasia, basic aural, Dr. Robert T. Cooper on, 25, 120.
Dyspepsia, alcoholic, 436.

Ellis, Mr. G. E. R., Introduction to practical organic analysis, 329.
Endocarditis, puerperal, Dr. W. C. Neville on, 112.
Enteric fever—abortive treatment of, 66—fifteen cases contracted at Suakim, Dr. Gore on, 441—true relapse in, Dr. J. W. Moore on, 486.
Ergot, constituents of, 504.
Ergotinic acid, 504.
Erichsen, Mr. John Eric, science and art of surgery, *Rev.*, 41.
Erysipelas—of the larynx and pharynx, 356.
Eucalyptus, oil of, 509.
Exploratory incisions in the diagnosis of abdominal tumours, 229.

Famine diseases, notes on, Surgeon-Major Porter, 361.
Farquharson, Dr. R., school hygiene, *Rev.*, 496.
Fever, enteric—abortive treatment of, 66—cases of, by Dr. Gore, 441—relapse in, by Dr. J. W. Moore, 486.
Finny, Dr. J. M., hyperpyrexia in rheumatic fever, 72—dissecting aneurysm of skeleton, 159, 276.
Fistula, artificial vesico-vaginal, in cystitis, by Dr. Macan, 265, 273.
Flinn, Mr. Edgar, exhibition of living specimen, 336.
Fœtid perspiration, 425.
Foot, Dr. A. W., introductory address, 386.
Forensic medicine, report on, by Dr. H. C. Tweedy, 415.
Foy, Mr. G. M., so-called malignant growths, 344.
Fracture of the olecranon, 176.
Franks, Mr. Kendal, sublingual epithelioma, 163—separation of upper epiphysis of the femur, 345.

Gabbett, Dr. Henry S., pulmonary phthisis and bacilli, 376.
Gore, Surgeon-Major, enteric fever contracted at Suakim, 441.
Grimshaw, Dr. T. W., house accommodation of artisans and labourers in Ireland, 7—relative disease and death-rate in town and country, 330.
Grosser, Dr. J., therapeutische Notizen, *Rev.*, 140.

Hæmorrhoids, treatment of, by injection 518.
Half-yearly reports—diseases of women, by Dr. W. J. Smyly, 53—nervous and mental disease, by Dr. R. Atkins, 143, 238—forensic medicine, by Dr. H. C. Tweedy, 415—materia medica and therapeutics, by Dr. Walter G. Smith, 504.
Hardwicke, Dr. H. J., Man: whence and whither, *Rev.*, 50.
Hare, Mr. Arthur W., pathological mycology, *Rev.*, 235.
Harkin, Dr. Alexander, sporadic and epidemic cholera, *Rev.*, 140.

Heuston, Dr. F. T., muscular and vascular anomalies, 256.
Hime, Dr. Maurice C., unbelief, *Rev.*, 326—a schoolmaster's retrospect, *Rev.*, 326.
Hirsch, August, handbook of geographical and historical pathology, *Rev.*, 229.
Holt, Mr. Vincent M., why not eat insects? *Rev.*, 43.
Hopein, 354.
Hospitals of the House of Industry, Mr. Thornley Stoker on, 469.
House accommodation of artisans and labourers in Ireland, Dr. Grimshaw on, 7.
Hutchinson, Mr. Jonathan, illustrations of clinical surgery, *Rev.*, 140.
Hydatid disease, recent works on, *Rev.*, 225.
Hysterectomy by the vagina, 435.

Index Catalogue of the library of the Surgeon-General's office, U.S. Army, *Rev.*, 411.
Industry, Hospitals of the House of, Mr. Thornley Stoker on, 469.
Infantile tetanus, Dr. H. Davy on, 220.
Infectious diseases, compulsory notification of, discussion on, 332.
Infectiveness of pneumonia, 434.
Insane, blood of the, 418.
Insanity—in general, report on, 143—alternating with spasmodic asthma, 419.
Intestinal obstruction, treatment of, 95.
International pharmacopœia, Dr. Quinlan on the necessity for a, 286.
Introductory address, by Dr. Foot, 385.
Iodine in diphtheria, 272.
Ireland, Academy of Medicine in, transactions of the, 67, 155, 256, 330.
Irish surgeons, anatomical knowledge of, Sir C. A. Cameron on, 453.
Itch, ointment for the treatment of, 265.

Jacob, Dr. Archibald H., compulsory notification of infectious diseases, 332.
Jones, Dr. H. Macnaughton, new demonstration speculum, 264.
Journal of Cutaneous and Venereal Diseases, *Rev.*, 142.

Keith, Dr. Thomas, surgical treatment of abdominal tumours, *Rev.*, 501.
Kennedy, Dr. Henry, senile dementia, 73.
Kidd, Dr. F. W., decidual cast of the uterus, 264.
Kraurosis vulvæ, 53.

Labourers and artisans in Ireland, house accommodation of, by Dr. Grimshaw, 7.
Landois, Dr. L., text-book of human physiology, *Rev.*, 233.
Larynx, erysipelas of the, 356—extirpation of the, for malignant disease, 407.
Lee, Mr. Arthur Bolles, microtomist's vade-mecum, *Rev.*, 51.
Little, Dr. James, the form of pneumonia now prevalent in Dublin, 74, 177.
Lunacy—laws, recent changes in the, 420 — Acts Amendment Bill, Lord Selborne's, 422.
Lupus, treatment of, 509.

Macan, Dr. A. V., artificial vesico-vaginal fistula for the cure of chronic cystitis, 265, 273.
M'Ardle, Mr. J., anomaly of arch of aorta, 68—urari in the treatment of tetanus, 170—arthritis from peripheral nerve lesions, 398.
MacCormac, Sir William, surgical operations, *Rev.*, 141.
MacDowel, Dr. Benjamin George, memoir of the late, 357.
MacMullen, Mr. James Carnegie, acute dissecting aneurysm of the aorta, 424.
MacMunn, Dr. Charles A., chromatology of actiniæ, *Rev.*, 230—colouring matters of the bile and urine, *Rev.*, 231.
Materia medica—physiological and applied, *Rev.*, 142—report on, by Dr. Walter G. Smith, 504.
Medical section of the Academy of Medicine in Ireland, 72, 260.
Medicated pastes, 511.
Medicine in Ireland, Academy of, transactions of the, 67, 155, 256, 330.
Menstruation, 54.
Mental disease, report on, by Dr. R. Atkins, 143, 238.
Mercurial inunction in typhoid fever, 66.
Mercury, tannate of, for syphilis, 329.
Meteorological notes, 90, 174, 269, 352, 431, 522.
Milk of wet nurses, extemporaneous examination of the, 435.
Moore, Dr. J. W., sanitary and meteorological notes, 88, 171, 266, 349, 426, 519—case of true relapse in enteric fever, 486.

Naphthalin, 510.
Nephrectomy, 437.
Nervous—disease, report on, by Dr. Ringrose Atkins, 143, 238—system, anatomy and physiology of the, report on the, 147.
Neurasthenia, Dr. J. Strahan on, 195.
Neuro-pathology and pathological anatomy, report on, 238.
Neuro-therapeutics, report on, 249.
Neville, Dr. William C., puerperal endocarditis with hemiplegia, 112.

Notification of infectious diseases, discussion on, 332.

Obituary notice of Dr. B. G. MacDowel, 357—Mr. Fred. W. Warren, 439.
Obstetrical section of the Academy of Medicine in Ireland, 264.
Obstruction, intestinal, treatment of, 95.
Oil of eucalyptus, 509.
Old, pathogeny of paralytic affections in the, 436.
Oleates, the, 508.
Olecranon, fracture of the, 176.
One hundred years of publishing, *Rev.*, 44.
Oophorectomy, 55.
Otorrhœa, chronic, artificial fluid tympanic membrane in, 176.

Paralysis, alcoholic, 94—of lower extremities, 438.
Paralytic affections in the old, 436.
Pastes, medicated, 511.
Pathological section of the Academy of Medicine in Ireland, 83, 159, 344.
Periscope, 93, 176, 271, 354, 434, 524.
Perspiration, fœtid, 425.
Pharmacopœia—International, Dr. Quinlan on, 286—British, 1885, *Rev.*, 317.
Pharynx, erysipelas of the, 356.
Phenol-camphor, 517.
Philadelphia, transactions of the College of Physicians of, *Rev.*, 45.
Phosphorus, effect of, on the fœtus, 505.
Phthisis and bacilli, by Dr. Gabbett, 376.
Piffard and Morrow, Journal of Cutaneous and Venereal Diseases, *Rev.*, 142.
Pilocarpin in alcoholism, 423.
Pneumonia—four cases of, in one family, by Dr. Walter G. Smith, 1—in Dublin, Dr. Little on, 74, 177—infectiveness of, 434.
Porter, Surgeon-Major Alexander, notes on famine diseases, 361.
Public health, *see* State medicine.
Publishing, one hundred years of, *Rev.*, 44,
Puerperal endocarditis with hemiplegia, by Dr. W. C. Neville, 112.
Pulmonary phthisis and bacilli, Dr. Gabbett on, 376.
Purser, Dr. J. M., apparatus for illustrating pulse-waves, 258.
Psoriasis, salicylic acid and castor-oil in, 437.
Pye, Mr. Walter, surgical handicraft, *Rev.*, 52.
Pyosalpinx, new operation for the cure of, 64.

Quinine, subcutaneous injection of, 425.
Quinlan, Dr. F. J. B., necessity of an international pharmacopœia, 286.

Records, clinical, 424.
Reflex, the chin, 154.
Relapse in enteric fever, Dr. J. W. Moore on, 486.
Reports, half-yearly—diseases of women, by Dr. W. J. Smyly, 53—nervous and mental disease, by Dr. R. Atkins, 143, 238—forensic medicine, by Dr. H. C. Tweedy, 415 — materia medica and therapeutics, by Dr. Walter G. Smith, 504.
Royat-les-Bains, Dr. Cruise on, 97, 260.
Roberts, Dr. Fred. T., theory and practice of medicine, *Rev.*, 410.
Robinson, Dr. Tom, lectures on acne, lichen, and prurigo, *Rev*, 327.
Royal University of Ireland, calendar for 1885, *Rev.*, 50.

Salicylic acid in psoriasis, 437.
Sanitary and meteorological notes, 88, 171, 266, 349, 426, 519.
Savage, Dr. George H., insanity and allied neuroses, *Rev*, 134.
Schäfer, Mr. E. A., essentials of histology, *Rev.*, 236.
Selborne, Earl of, Lunacy Acts Amendment Bill, 422.
Semple, Mr. Armand, aids to botany, *Rev.*, 325.
Shekleton, dissecting aneurysm of, Dr. J. M. Finny on, 159, 276.
Shoemaker, Dr. John N., the oleates, *Rev.*, 328.
Skin—changes in the, in some forms of disease, by Mr. Bewley, 185, 305—works on diseases of the, *Rev.*, 327—treatment of, 513.
Smith, Dr. Walter G., four cases of acute pneumonia in one family, 1—renal sarcoma, 159, 262 — report on materia medica and therapeutics, 504.
Smyly, Dr. W. J., report on diseases of women, 53—diagnosis of pelvic hæmatocele, 265.
Sphacelinic acid, 505.
Spray remedies for skin diseases, 355.
Squire, Mr. Balmanno, Pharmacopœia of the British Hospital for Diseases of the Skin. *Rev.*, 327.
State medicine, sub-section of, in the Academy of Medicine in Ireland, 155, 330.
Steavenson. Dr. W. E., electricity in disease. *Rev.*, 328.
Stelwagon, Dr. H. W., pamphlets on skin diseases, *Rev.*, 327.
Stirling, Dr. William, Landois' text-book of human physiology, *Rev.*, 238.
Stoker, Professor W. Thornley, multiple exostoses, 83—treatment of stricture by internal urethrotomy, 337—the hospitals of the House of Industry, 469.

Stokes, Professor William, suicidal wound in the throat, 165.
Stomach, movements of the, 255.
Story, Mr. J. B., oil wart, 85.
Strahan, Dr. J., acute and chronic neurasthenia, 195.
Suakim, enteric fever contracted at, Dr. Gore on, 441.
Sulphurous Acid, poisonous qualities of, 272.
Surgeons, Irish, anatomical knowledge of, Sir C. A. Cameron on, 453.
Surgery, International encyclopædia of, *Rev.*, 48.
Surgical section of the Academy of Medicine in Ireland, 79, 166, 336.
Swan, Mr. R., condylotomy with the osteotome for genu valgum, 80.
Syphilis, tannate of mercury for, 329.

Tannate of mercury for syphilis, 329.
Tetanus infantum, Dr. Henry Davy on, 220.
Thallin, 508.
Therapeutics, report on, by Dr. Walter G. Smith, 504.
Thomas, Dr. J. D., hydatid disease in Australia, *Rev*, 225—hydatid disease of the lungs, *Rev.*, 226.
Thorburn, the late Dr. John, treatise on the diseases of women, *Rev.*, 318.
Thudichum, Dr. J. L. W., the coca of Peru, *Rev.*, 329.
Thyroid gland, function of the, 271.
Tinea tonsurans, new method of treating, 507.
Transactions of the—College of Physicians of Philadelphia, *Rev.*, 45—Academy of Medicine in Ireland, 67, 155, 256, 330—Medical and Chirurgical Faculty of Maryland, *Rev.*, 319—New York State Medical Association, *Rev.*, 320.
Tuberculosis and scrofula—experimental researches on, by Mr. Wooton, 290—treatment of, 436.
Tuke, Dr. D. Hack, the insane in the United States and in Canada, *Rev.*, 492.
Tympanic membrane, artificial fluid, in chronic otorrhœa, 176.
Typhoid fever—abortive treatment of, by mercurial inunction, 66—true relapse in, by Dr. J. W. Moore, 486.

Unna, Professor, medicated pastes, 511.

Vagina, hysterectomy by the, 435.
Vesico-vaginal fistula, artificial, in cystitis, Dr. Macan on, 265, 273.
Vital statistics, 88, 171, 266, 349, 426, 519.

Wardell, Dr. J. R., pathology and practice of medicine, *Rev.*, 410.
Warren, Mr. Frederick W., obituary notice of, 439.
Weber, Dr. Hermann, Croonian lectures on chronic phthisis, *Rev.*, 414.
Westcott, Mr. W. Wynn, suicide, *Rev.*, 234.
Wet nurses, extemporaneous examination of the milk of, 435.
Wheeler, Mr. W. I., excision of clavicle, 79—excision of the shoulder, 79.
Whitla, Dr. William, elements of pharmacy, materia medica, and therapeutics, *Rev.*, 499.
Williams, Dr. F., Dr. Brunton's text-book of pharmacology, *Rev.*, 37.
Women, diseases of, Dr. W. J. Smyly's report on, 53.
Woodhead, Dr. G. Sims, pathological mycology, *Rev.*, 235.
Wooton, Mr. Edwin, experimental researches upon tuberculosis and scrofula, 290.
Works on—cholera, *Rev.*, 40—hydatid disease, *Rev.*, 225—chromatology, *Rev.*, 230—diseases of the skin, *Rev.*, 327.

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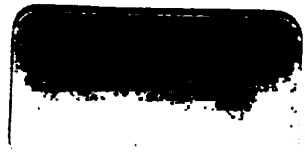

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